MAY '61

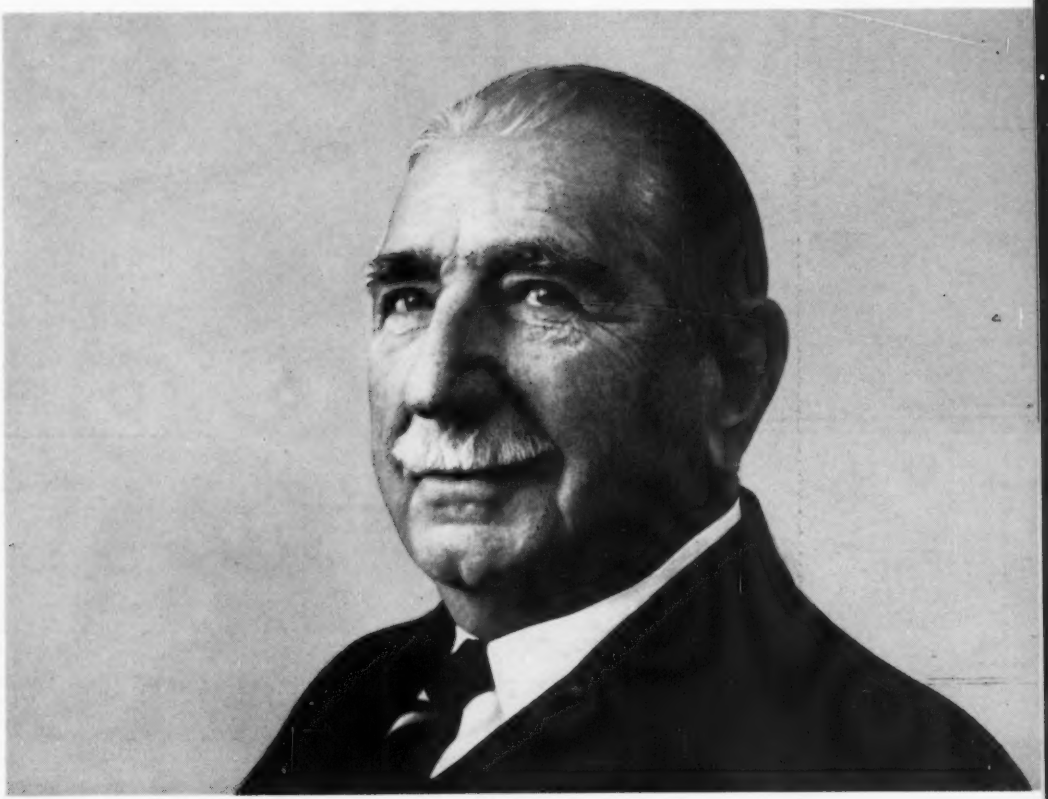
MODERN TEXTILES MAGAZINE

Specializing in Man-Made Fibers and Blends since 1925

FIBERS

FABRICS

FINISHES



Iselin-Jefferson's FLOYD JEFFERSON, SR.— a long, happy life marked by great achievement— story page 21

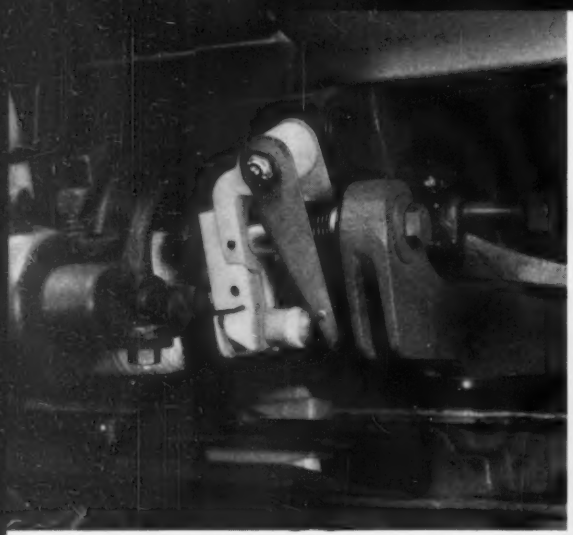
HOW TO IMPROVE QUALITY OF FABRIC-FOAM LAMINATES

New Identity tests for manmade fibers

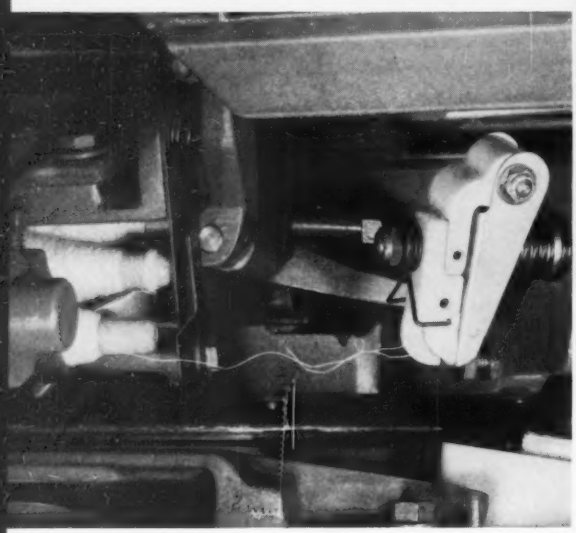
Fabric styling in Europe

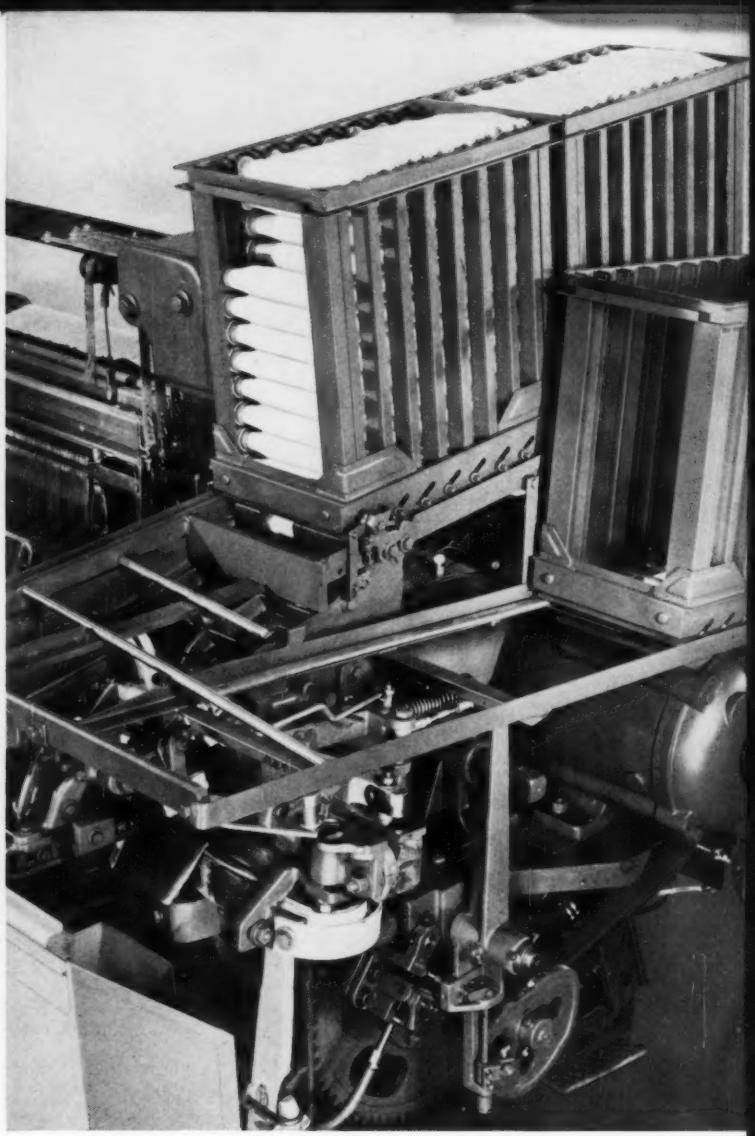
Tufted fabrics and tufting machines

AND 10 MORE USEFUL ARTICLES AND EXCLUSIVE REPORTS



▲ EXTRACTOR HEAD ASSEMBLY MECHANICALLY
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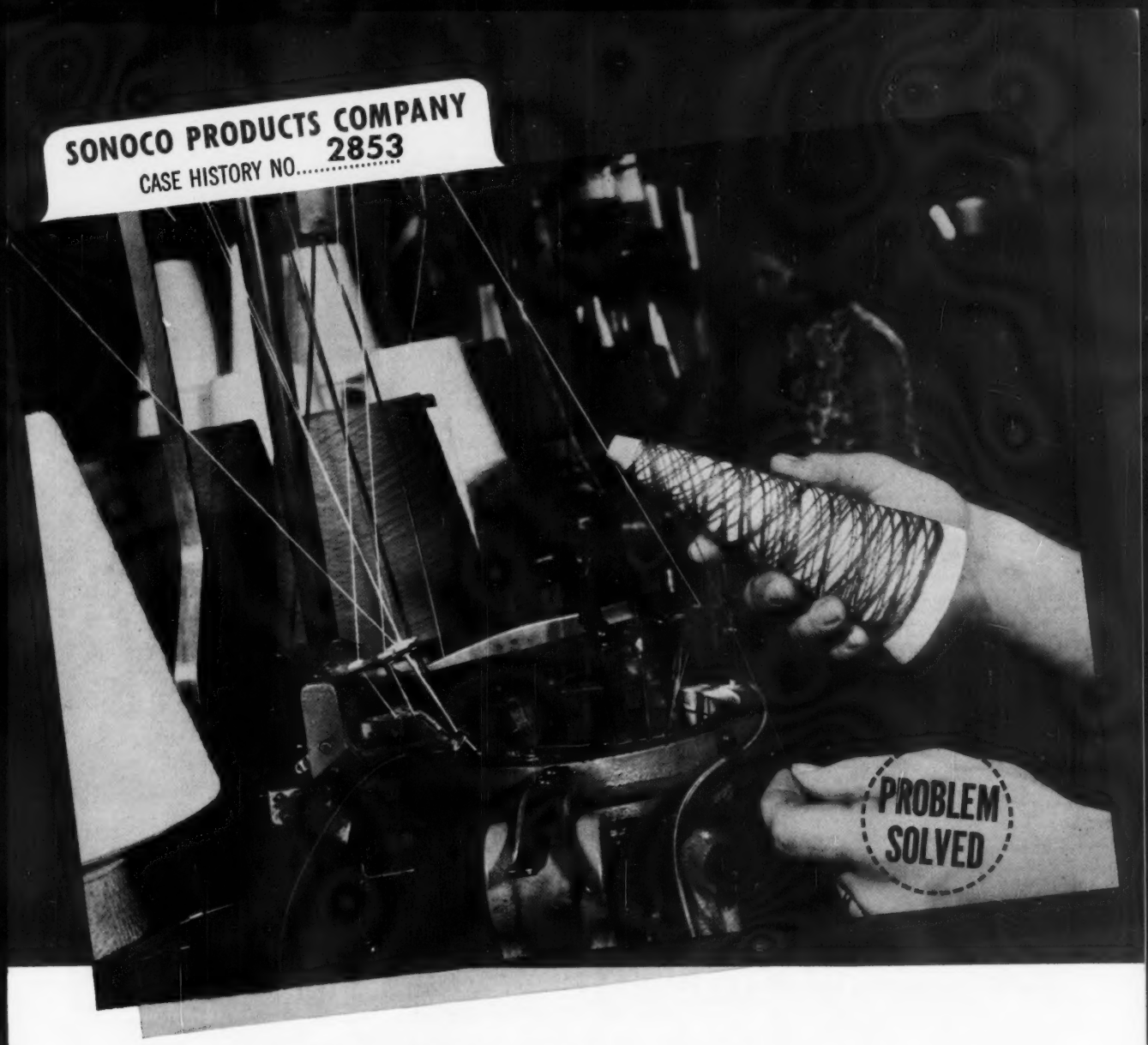
New reasons why . . .

the Draper Automatic Filling Magazine offers greater mill savings

The Draper Automatic Filling Magazine with a new cam operated pivoting extractor and mechanical thread clearer eliminates the need for a vacuum system to clear the thread and the tip bunch of the incoming bobbin after transfer. This new construction reduces mill installation time and cost . . . simplifies maintenance . . . and improves cloth quality. *Consult your Draper representative for details on this and other advantages of the Draper Automatic Filling Magazine.*

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PROBLEM: Cones for use in accelerated conditioning of yarn

Equipment which accelerates the cycle of yarn conditioning is an outstanding example of industry progress. However, the introduction of this equipment created two problems. Because of the excessive amount of moisture, cone walls were breaking down and the primary winds were sticking to the cones. To eliminate these problems a cone was required with a surface to which the yarn would not stick and which would withstand the effects of the additional moisture.

Sonoco research solved these problems quickly by proving conclusively that only Unitex Surface cones should be used in this method of processing. Use of this type cone has eliminated the difficulties first encountered through the use of accelerated cycle yarn conditioning equipment.

Technical service of this type is an added benefit when you buy from Sonoco. *Only Sonoco,* in its field, provides the continuous research, product development and integrated manufacturing needed to meet the ever-changing techniques of the textile industry. Let Sonoco's more than 60 years' experience help you!

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MODERN
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May, 1961 Vol. 42, No. 5

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Established 1925

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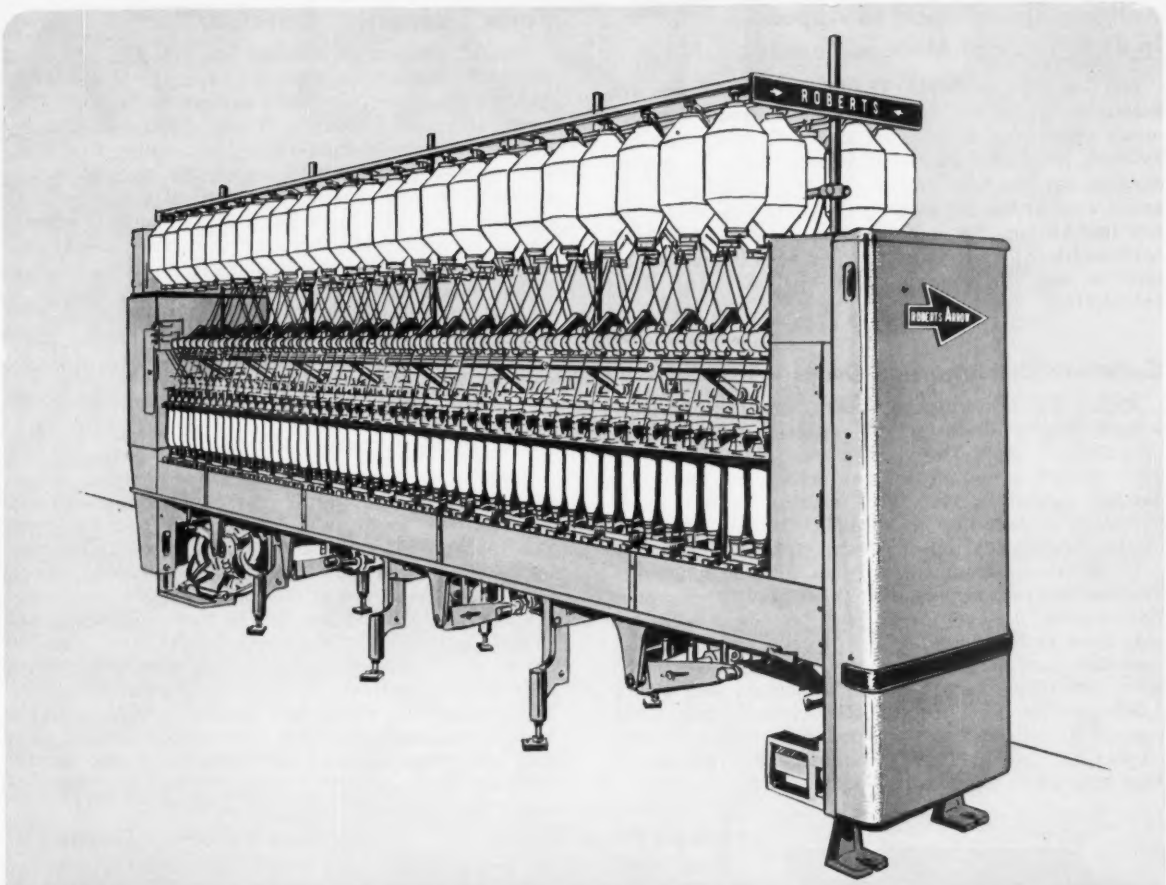
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ROBERTS ARROW

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1200 NEW ROBERTS ARROW Spinning Frames with some 380,000 spindles have been installed in mills since their introduction four years ago; dramatic testimony that Arrow Spinning does the job to mill satisfaction!

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REDUCED CLEANING, MAINTENANCE! Strictly functional, new Arrow Spinning has been engineered for trouble-free operation with reduced cleaning and maintenance. Simplification of components, and fewer parts provide quick, easy cleaning.

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Knitting Show Report to Appear In June Issue of Modern Textiles

Next month MODERN TEXTILES MAGAZINE will publish a special staff-written report on new developments in knitting as revealed at the Knitting Arts Exhibition, held April 24-28 at Atlantic City. To gather material for this broad review, MTM's editors spent an entire week at the big knitting show interviewing exhibitors and visitors. For a detailed briefing on the profit opportunities in knitting as revealed at Atlantic City be sure to read the June Issue of MODERN TEXTILES MAGAZINE.

Cellulose Consumption Drops

Rayon and acetate producers in this country consumed 503,000 short tons of cellulose in 1960, 13% less than in 1959. The change was in line with the 12% decline in cellulosic fiber production to 1,028,-500,000 pounds in 1960. This information was made available recently by the Textile Organon, bulletin of the Textile Economics Bureau, Inc.

Of cellulose consumed last year, 481,000 tons were derived from wood pulp and 22,000 tons from cotton linters pulp. An average of 1.048 pounds of cellulose was used in the manufacture of each pound of viscose and cuprammonium rayon last year, compared with the 1959 average of 1.050 pounds and 1958's 1.060 pounds. For acetate, the average was 0.682 pounds of cellulose to each pound of filament yarn, staple and tow in 1960 as against 0.679 pounds in 1959 and 0.680 pounds in 1958.

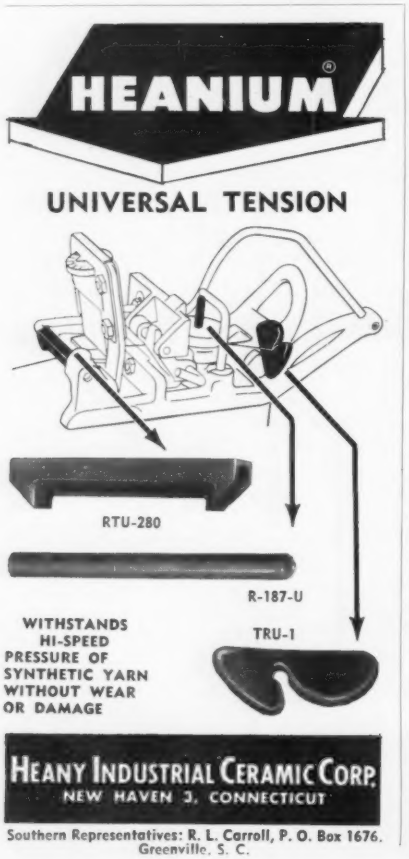
Term "Polynosic" Rejected

The U.S. Court of Appeals has rejected a plea of Bigelow-Sanford Carpet Co., Inc. to classify its Zantrel fiber as "polynosic" instead of "rayon." The court affirmed a Federal Trade Commission order denying the carpet maker's request, ruling that Zantrel polynosic fiber falls under the already established term of "rayon." The Appeal Court's ruling upholds the FTC's powers to determine generic names for manmade fibers for use under the Textile Fiber Products Identification Act.

The same court is expected to decide soon on a related case brought by Courtaulds to upset an FTC denial of a separate name, "Lincron," for its Topel and Corval fibers.

Data on Tire Failure Cited

Tire cords—both nylon and Tyrex viscose—maintain a high percent of their original strength for up to 100,000 miles of service, according to a two-year tire research program by Fabric Research Laboratories. Other conclusions of the research report, which was presented at the recent annual meeting of the Textile Research Institute in New York, are: cord fatigue is not a factor in tire failure; the probable cause of cord failure is adhesion breakdown with mileage not a reliable indicator of impending failure. The results—in which the report says both nylon and Tyrex producers can find encouraging data—hold true regardless of the severity of tire service conditions.



Bissinger Heads Tyrex

Frederick Bissinger, president of Industrial Rayon Corp., has been elected president of Tyrex, Inc., an association of Tyrex rayon tire cord producers. Also elected were: Philip B. Stull, American Enka Corp., vice president; Hastings W. Baker, Beaunit Mills, Inc., treasurer, with Philip E. Robinson continuing as executive secretary. To date, the Tyrex trademark for rayon tire yarn and cord, has been registered in 18 countries and applications to register are in process in 17 others.

Clemson Summer Courses

Courses designed to increase the knowledge and efficiency of personnel in the textile industry and related fields will be offered in summer short courses at the Clemson College School of Textiles, Clemson, S. C., beginning June 12. The courses include: yarn manufacturing; fabric development; supervisor development; quality control, and motion-and-time study.

New Foster Warehouse

The Foster Machine Co. will operate a repair parts warehouse in Belmont, N. C., to service Foster winders installed in southeastern United States. The new facilities will include an office and showroom.

National Vulcanized Expands

National Vulcanized Fibre Co. has merged with Fisher Manufacturing Co., Inc., a major supplier of metal, vulcanized fibre, fibre-glass, and fibre-armored materials handling receptacles for the southern textile industry. The merger gives National Vulcanized, makers of Lestershire bobbins, Kennett roving cans, and other textile specialty items, a manufacturing outlet in the south.

M.I.T. Textile Courses

Two courses on textiles are being offered this summer by the Textile Divison in the Department of Mechanical Engineering of Massachusetts Institute of Technology, Cambridge, Mass. The first, "Elements of Textile Structural Mechanics," is scheduled for Monday, June 19, through Friday, June 23. The second, "Advanced Mechanics of Textile Structures," will be given from Monday, June 26, through Friday, June 30.

Eastman Olefin Fiber

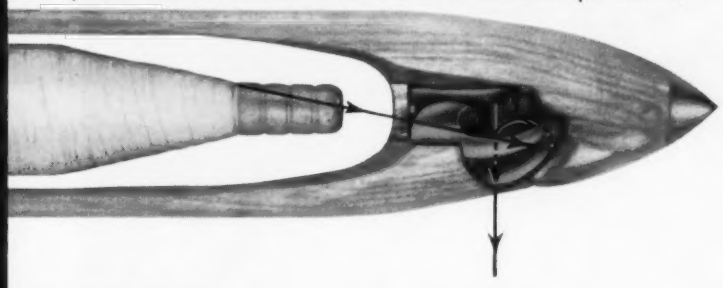
Eastman Chemical Products will soon have semi-commercial quantities of a polypropylene fiber available for evaluation, according to Eastman Kodak Co.'s annual report. The fiber has reached the pilot-plant stage at the Tennessee Eastman division in Kingsport, Tenn.

AT LAST!

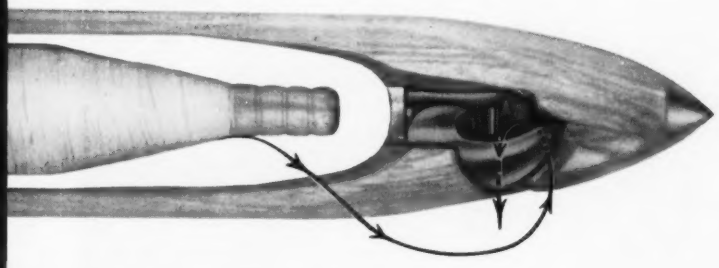


THE SHUTTLE EYE THAT CAN'T UNTHREAD

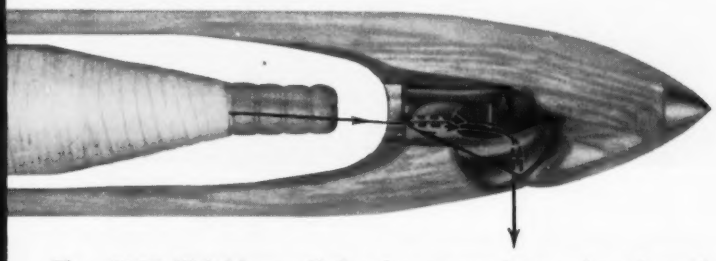
The #112 "McHargue" Eye just simply cannot let the yarn out, no matter how much it balloons, loops, twists and tangles. The Patented construction (U.S. Patent #2659395) keeps the yarn always within the eye, to fall back into normal position at the next pass of the shuttle. This eye was developed by mill men to overcome these most difficult problems.



Here are typical examples: When the eye is threaded, filling can be lifted completely out over top of the eye, and will rethread immediately.



With the yarn completely out over top of the eye, yarn can be "sawed" on hook and will not unthread. When filling is pulled it will fully rethread immediately.



Yarn can be fully looped on eye, around scroll point and hook, and it will rethread immediately at the next pass of the shuttle. Many other faults in yarn passage are overcome just as easily.

The #112 "McHargue" Eye has proved its value through years of testing in numerous high production mills, and is truly "worth its weight in gold." Order your next Southern Shuttles with the new Patented #112 "McHargue" Eye and see how quickly they will save you money by preventing down time and seconds from broken, twisted yarn. Or, ask one of our qualified Sales Engineers to show how you can effect savings and improve production.

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The largest chenille spread manufacturers put bedspreads made with Skybloom through exhaustive wash tests. These tests proved that Enka Skybloom chenille spreads have *less fallout* than other spreads. Moreover, Skybloom chenille spreads have clearer colors, too.

And on production runs, tufters have found that Enka Skybloom fiber "appeared superior in regard to uniformity in tufting, texture and dyeing."

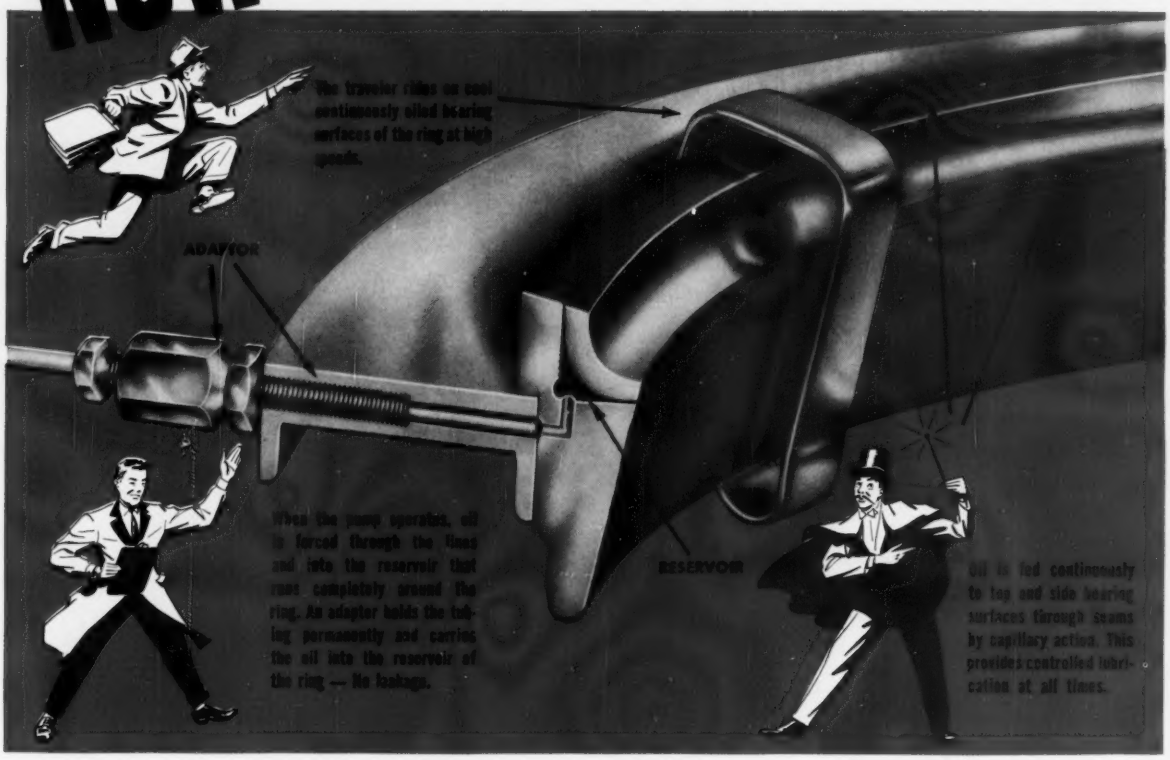
If you haven't used Enka Skybloom chenille yarn yet—try it now! See for yourself the matchless bloom, the sparkling eye appeal it gives to your spreads. Contact Enka Merchandising in New York at 350 Fifth Avenue, PE 6-2300 for the names of the Skybloom yarn spinners.

RETAILERS: See these outstanding Enka Skybloom chenille spreads today. Call Enka Merchandising in New York (address above) for the names of leading bedspread manufacturers who are using this fabulous, new yarn.

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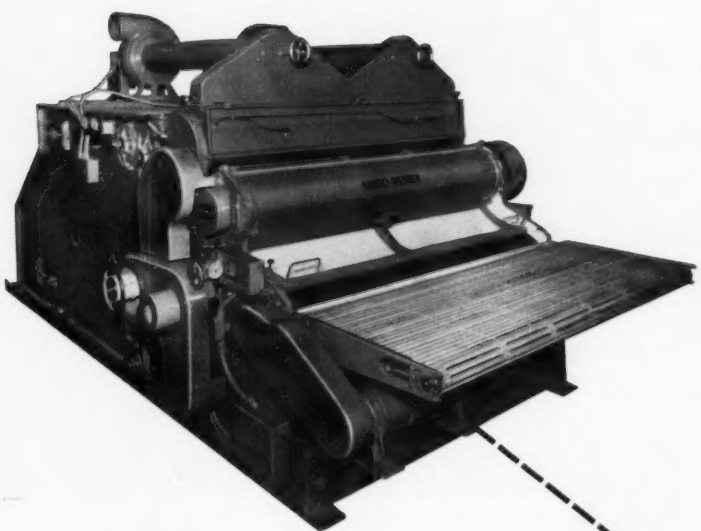


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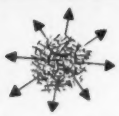
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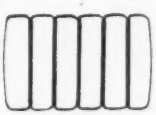
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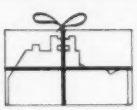
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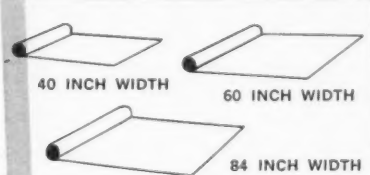
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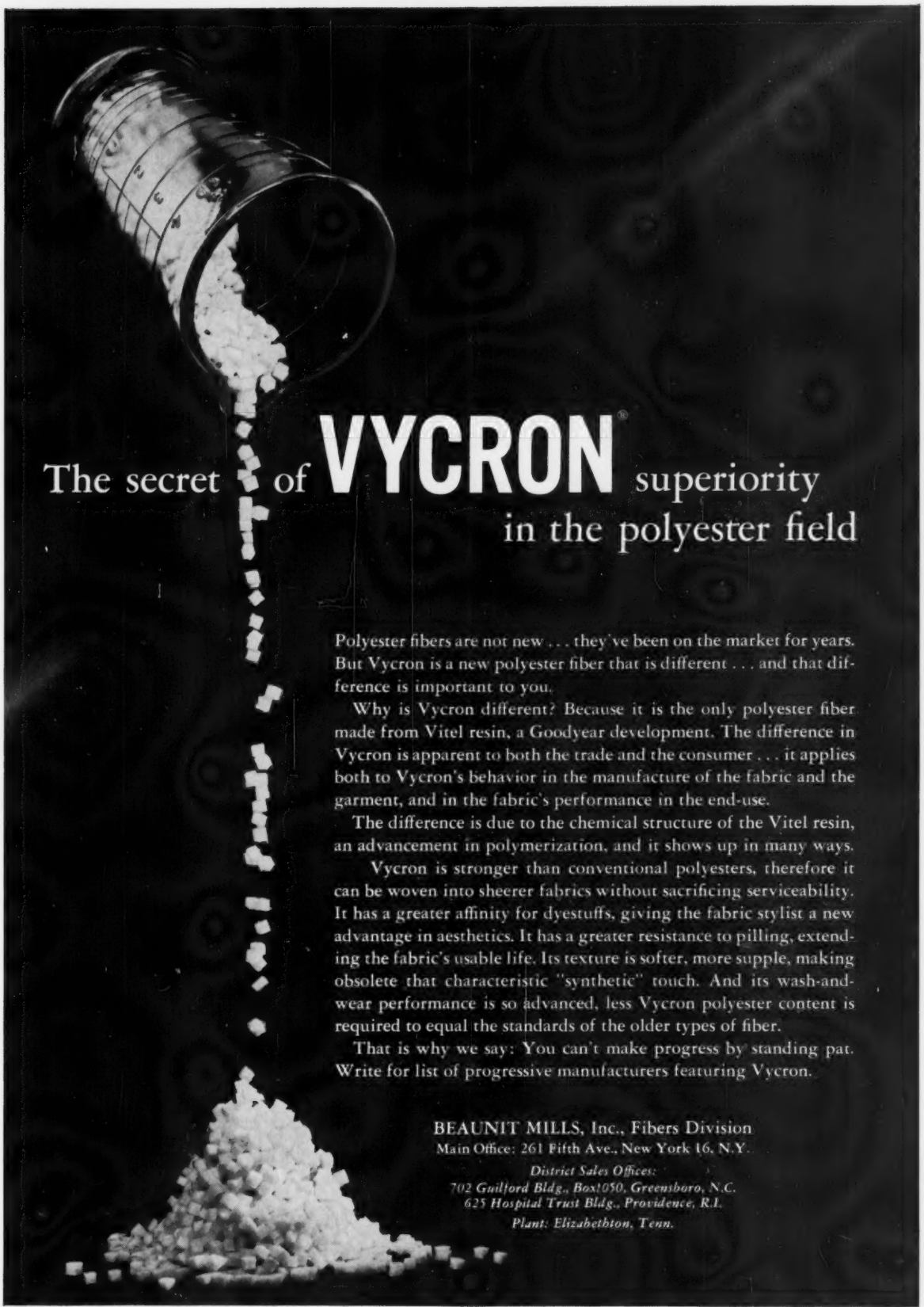
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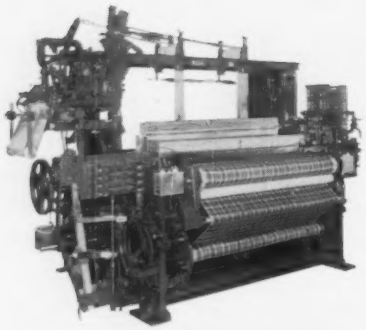
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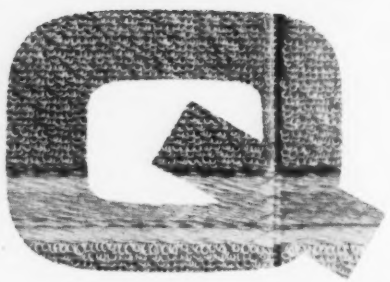
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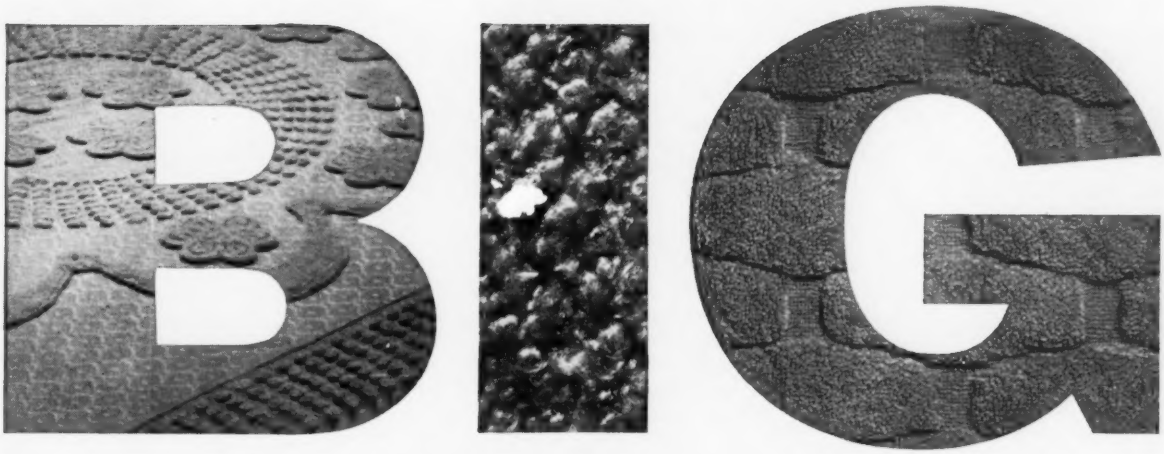
WORLD LEADERSHIP IN AUTOMATIC BOX LOOMS–RESEARCH–ENGINEERING–MANUFACTURE

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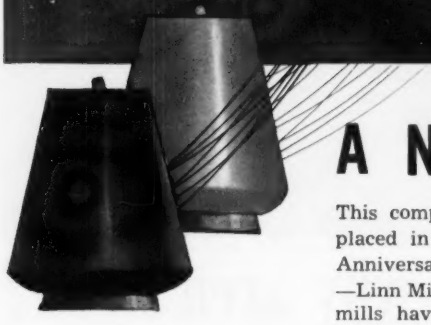
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MODERN TEXTILES
Magazine

Publisher's Viewpoint

Something Special for Readers, Advertisers

WITHIN THE NEXT 30 DAYS, MODERN TEXTILES MAGAZINE will offer something which we believe will be of inestimable value to everyone in textiles. And for our advertisers, whom, of course, we hold in high regard, MODERN TEXTILES will offer a very special, and, we are convinced, effective way to tell the story of their products and services to users in the textile industry.

Our First "Thirteenth Issue"

This something special will be a special issue of MODERN TEXTILES MAGAZINE—our "13th Issue", if you will—whose editorial contents will be made up entirely of the full texts of the talks and panel discussions which were presented last February at the First Annual Conference of the American Association for Textile Technology, Inc.

As many readers who were lucky enough to be present will recall, AATT's First Annual Conference was devoted to a free-wheeling, uninhibited discussion of the ways manmade fibers could be more profitably used in textiles. In a series of panel discussions, kicked off by vigorous keynote talks, leaders of our industry, representing the entire spectrum of textiles from fiber-producing to retailing, answered questions submitted by the audience in advance of the meeting.

The Talk Was Frank

The resultant discussions, stimulated by this method of getting at the heart of the present situation in textiles, was deadly serious, deeply searching and marked by unusual frankness on the part of all concerned.

So great was the interest aroused by this meeting, that the officers of AATT received many requests for printed copies of the talks and discussions at the meeting. In response to this demand, MODERN TEXTILES MAGAZINE, as official publication for AATT, has arranged to bring out our upcoming special issue.

All our subscribers will receive a copy as a bonus of valuable reading. In addition, there will be copies distributed to every person who attended AATT's annual meeting. Beyond this a limited number of copies will be available for sale to interested persons at $1 each.

For our advertisers, and indeed for every company that has products or services to sell the textile industry, this special issue will be an unusually effective medium for their advertising message.

Advertising space in the special issue is still available at our ordinary rates. A substantial number of companies have already contracted for space. But we make no secret of the fact that we are anxious to enroll still more advertisers in the issue. It is bound to be read closely, studied with sharp attention for months to come by management, production and marketing men in every phase of textile manufacturing and distribution. Companies whose advertisements appear are virtually guaranteed maximum exposure for their advertising messages. Thus we feel it our duty, as a service to our advertisers, to use this space, ordinarily reserved for other matters, to alert them to the opportunity presented by our upcoming Thirteenth Issue.

If you want to reserve space in this special AATT Annual Meeting Issue of MODERN TEXTILES, telephone or wire us at once. Our telephone number is MUrray Hill 4-0455, and our street address is 303 Fifth Avenue, New York 16, N. Y.

A. H. McCullough

TEXTILE NEWS

World Wide

EUROPEAN TEXTILE TRADE is pacing broad economic unification. At a meeting in Zurich, the two European groups—the Common Market Six, led by Germany and France, and the Outer Seven, sparked by Britain—agreed to pool their differences on trade matters for all textiles except manmade fibers which will be considered separately. Tariffs will be "harmonized," imports encouraged and dumping discouraged.

AND WORLD COTTON MEN welcome implications of the Zurich agreements. The International Federation of Cotton and Allied Textile Industries announced in Manchester that for the first time, "a bridge between the two groups" has been built. IFCATI said the "Sixes" and "Sevens" would now have to look into matters of textile origin control and trade coordination.

CELANESE, HOECHST JOIN to produce and market in Europe a nytril manmade fiber. "Travis" will be the trade mark in Europe; it is Darvan in the U. S. The new company, Bobina Faserwerke, will produce at Bobingen, Bavaria, and marketing will be handled by Hoechst. Darvan was originally brought out by B.F. Goodrich, and bought by Celanese two years ago. Meanwhile it is reported that pilot plant output of Darvan in the U.S. will be ended.

TEIKOKU RAYON GETS Snia Viscosa rights to make nylon 6, or Lilion. The Italian firm's process is said to have low production costs and an important by-product output of cheap ammonium sulphate. Other Japanese firms are dickering for the Snia nylon rights.

MANMADE, WOOL BLEND yarns are to be manufactured by Shikishima Spinning Co. The manmade part would be Urilon fibers, supplied by Toyo Koatsu. The blend would be Urilon polyurea-wool. The blend yarns are said to be lower cost, lighter and more resistant than acrylic or nylon fibers.

ARGENTINA'S BRILLON company will make stretch and Agilon yarns, at its Buenos Aires plant, under Deering Milliken Research license. The company is capitalized in Argentina and uses West German and French equipment.

FRENCH MAP PURE WOOL sales campaign. Leading French wool firms and British Commonwealth growers say they will spend $5.6 million on promotion over the coming three years. Fabrics, hose and knitting yarns will carry a sheep-shape label. The International Wool Secretariat called the union of topmakers and merchants "significant."

BRITAIN'S ICI REVEALS plans to double production of polypropylene at its Wilton plant in Yorkshire. "A considerable tonnage" will go into the fiber and film fields, it was said. Declining prices for polypropylene "makes it a more attractive proposition for fiber application," an ICI source said. Present output of 11,000 tons a year will be lifted to 22,000.

SWISS FIRMS' NEW NYLON paper venture seen possessing broad development potential. The product is called Syntosil. It is being marketed by Zurich Paper Mill and was developed with Viscose Suisse, at Emmenbrucke near Lucerne. It looks like and can be used as paper but can also be sewn, washed and ironed. It is supple when wet. It is resistant to chemicals.

PIRELLI SETS UP ELASTIC yarn production at Milan, Italy. The yarn, Vairin, is under U.S. Rubber license. Pirelli Lastex plans to use the new yarn in lightweight weaves for home furnishings, hosiery, outerwear and underwear.

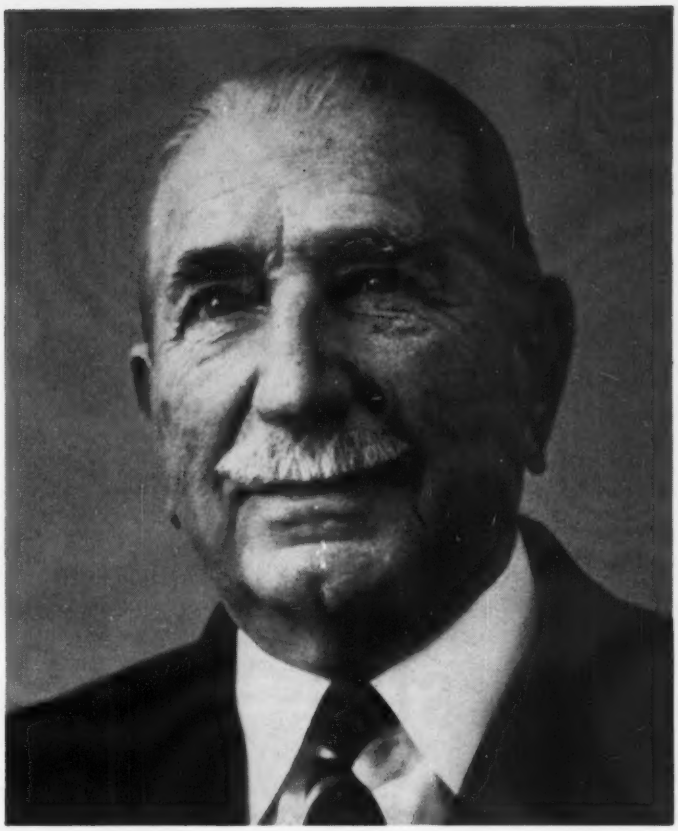
S. AFRICA NOW MAKING crimped nylon yarn. The new $730,000 Cape Town plant, set up by British Nylon Spinners, has an initial capacity of 500,000 pounds a year. It will supply most of South Africa's domestic needs. The new firm's name is Nylon Processors of South Africa Ltd.

FIRST E. AFRICA RAYON plant will be established in Kenya. The newly formed Kenya Rayon Mills Ltd. will build a plant at Mombassa with assistance from Japan's Mitsubishi group of companies. When output starts in July, 1962, it will compete with Japanese imports which supply most of East Africa's high demand.

TAIWAN'S NEW COTTON factory, built at a cost of $1.75 million, may export to the U. S. and Britain. Most of the 21,000-spindle, 400-loom production will go for home consumption. But export negotiations have started. Hong Kong and Formosan capital backed the plant.

RUSSIAN FASHION SHOW will be part of the Soviet Trade and Industries Fair which will be held in London, July 7-29. Men and womenswear in natural and manmade fibers—possibly to include Russia's Lovsan—will be exhibited.

The ability to inspire confidence, to make the large gesture that creates success, and yet to live for others as well as for himself has made this man outstanding in textiles



FLOYD JEFFERSON'S STORY

By the Editors

FEW MEN IN TEXTILES are so widely known and so deeply respected as friendly, courteous and vital Floyd W. Jefferson Sr., who as co-chairman of the board of Iselin-Jefferson Co., and chairman of the executive committee of Dan River Mills, has capped a long and successful career as a textile merchant. A year ago when he returned from a tour around the world, hundreds of men and women from textiles, banking circles and other businesses, as well as from the arts and public life crowded the huge ballroom of the Hotel Sheraton-Astor in New York City in a testimonial dinner to pay honor to the man who is truly the dean of the New York fabric market.

To the tributes paid him that night by a dozen speakers, Jefferson replied with a brief talk, at once modest, humorous and touched with seriousness, as he reviewed the world situation, and pressed home the need of the American textile industry for protection against low-wage foreign imports. He concluded by quoting from one of his own poems, written two years earlier, a poem that is in essence a prayer for peace in the world and a hope for harmony among the world's conflicting powers.

The man who was so warmly honored that night last May was born in Louisville, Kentucky 82 years ago into a distinguished Louisville family. Educated in Louisville schools, Floyd Jefferson went on to attend Yale University where he distinguished himself as a public speaker and debater, winning the Sophomore Oratorical Award, one of the oldest endowed prizes at Yale. Along with his public speaking, he was active as a contributor of poems and articles to Yale literary magazines, and later was elected editor of the Yale Courant, a bi-weekly magazine. As a tribute to his reputation as a college poet he was chosen to write and deliver the class valedictory poem upon his graduation in 1902.

Along with all these bookish activities, he found time for athletics, playing on the Yale College baseball team and also trying his skill at football although, weighing only 137 pounds, he was not material for the varsity team, he recalls today. Since leaving Yale he has maintained a lifelong interest in the University, being active over the years in its alumni groups as

(Continued on Page 43)



TALK IN MIAMI — J. M. Cheatham, ACMI president, chats with newly elected officers of trade group at annual meeting. Left to right are William H. Ruffin, Erwin Mills, first vice president; Cheatham; Robert T. Stevens, J. P. Stevens & Co., second vice president and R. Dave Hall, Climax Spinning Co., president

ACMI steps up import fight

Millmen at annual meeting hear Hodges, Pastore; cheered by reported pick-up in fabric demand

Staff Prepared

A STRONG SENSE OF OPTIMISM, tempered by the awareness of the increasing dangers posed by imports from low-wage foreign countries, was evident among the 900 persons attending the annual meeting of the American Cotton Manufacturers Institute in Miami, Fla., March 23-25. Observers at the meeting noted that the feeling of optimism, strong though guarded, was based on a statistical indication that an upturn in the textile industry was in sight, and a belief that the present administration in Washington has begun to realize the gravity of the textile imports problem.

Those attending the annual meeting were cheered by a report by Donald J. May, director of the Institute's economic information division, that a change in the January-February ratio of unfilled orders to inventories indicated a pickup in the industry's economic outlook. May cautioned the audience, however, that the change could only be temporary. He pointed out, that in recent months textile output had dropped more sharply and further than the nation's all-industry average and more rapidly than in the 1956-1958 downturn. This decline, he said, pointed up the severity of the rise in imports over the past 18 months. In December, however, there was a rise of 13% in unfilled orders and a shrinkage in inventories.

Secretary of Commerce Luther H. Hodges promised his listeners that "you will get a decision . . . you will get action" from the Kennedy administration on the imports problem.

"A national administration cannot settle the textile problem in a vacuum or without regard to other matters", Hodges said. "The solution, or the easing of the problem, is not simple, is not easy, and it presents many collateral problems, as you can well imagine".

Senator John O. Pastore, in a speech at the closing session, called upon the administration to "make textiles part of the new frontier". He assured the audience that "there is enough power in existing law, there is enough power in the presidency of the United States, to ameliorate the situation in the textile industry in the United States of America and to do so quickly. No further legislation, in my humble opinion, is required".

"This matter must be discussed on an international level", he said. "Our friends must be made to understand that the American market still welcomes them, but we must convince them as diplomatically as we can, that the American consumer is not inexhaustible. He is alive and kicking only insofar as he has a job, and what we are talking about today, my friends, involves the jobs of two million Americans".

No sooner had Senator Pastore finished his talk to a standing ovation than the meeting unanimously endorsed a resolution approving all the recommendations of a Senate subcommittee named to investigate textile problems which he heads and also commending President Kennedy's "unusual action" in appointing a Cabinet-level committee to consider the textile imports problems.

During his Friday address, Secretary of Commerce Hodges noted that textile mill production, profits and employment have been lagging behind the general economy and that the "deterioration" can be traced

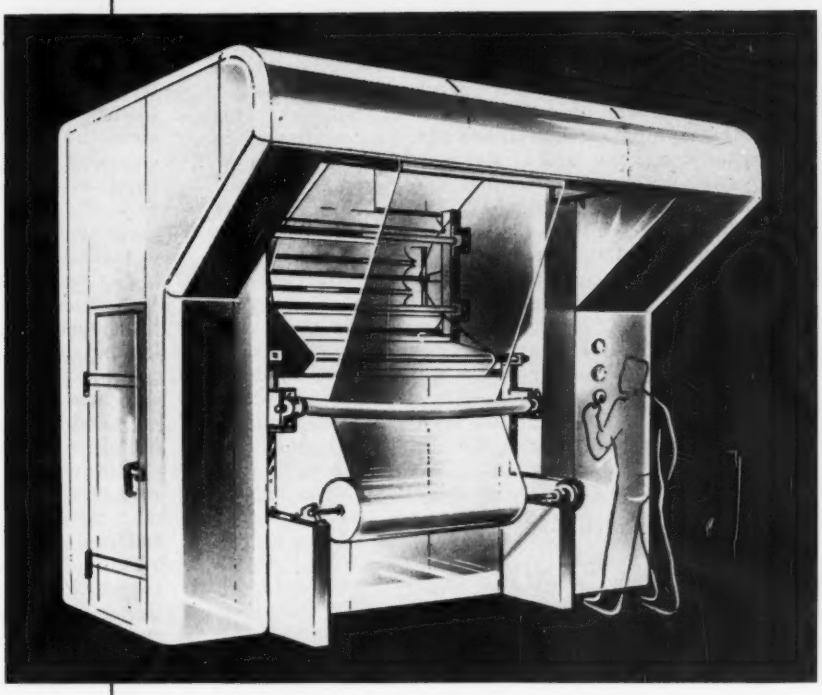
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FORTY-FIRST YEAR • INSTALLATIONS AROUND THE WORLD

For optimum quality FABRIC-FOAM LAMINATES— follow these steps

By J. R. Cunningham,
FOAM DIVISION, SCOTT PAPER CO.

THE SUCCESSFUL INTRODUCTION of polyurethane foam to the field of textile fabric marketing has created a modern revolution in this dynamic industry. This unique synthetic material has added a new dimension to the designer's field of vision, and has created new markets for many fabrics that were heretofore limited in their scope of practical application. Now everyone wants to "get into the act", but not all have taken the time to learn their parts!

Those responsible for the creation and development of textile grade polyurethane foam are gratified to see the reception given this product by the textile industry. If our product is understood and sensibly utilized, a permanent position in the apparel industry will be the result. If, on the other hand, polyurethane foam is treated as a promotional gimmick, then we shall all too quickly awake to find that the fox has made off with the goose that lays golden eggs. It is high time steps are taken to avoid such an end.

Foam Lamination—What It Is

Let us go back to the question: Just what is fabric to foam lamination? Is it a science, an art, or black magic? The answer, at the moment, appears to be a combination of all three. This dilemma can—and must—be changed. To effect this change we must first understand that any technique employed to bond fabric to polyurethane foam is a *process* operation. The areas of vital concern common to any laminating process are: (a) the fabric employed; (b) the mechanical handling of the foam and the fabric; (c) the method used to combine the two materials.

In considering the first of these variables, it must be recognized that the characteristics of individual fabrics cover a broad spectrum. Discrimination, therefore, must be employed in selecting a fabric for foam lamination. To intelligently employ any fabric for a particular end-use market, we must first know—or learn—the demands that will be made of the material by the consumer. Such requirements as wear resistance, stability during dry cleaning or washing, shrinkage limitations, permanence of color, water repellence, soil resistance, and many other customer expectations must be known and considered in fabric selection. While it is true that laminating with polyurethane foam materially improves the properties of many fabrics, it must not be assumed that foam lamination magically renders all fabrics suitable for all end-use applications.

We must consider the mechanical handling of both the foam and the fabric during the laminating operation. Both materials are subject to stretching, elongation, distortion, wrinkling, compression, etc. These are problems familiar to the textile finishing industry, which has displayed competence in resolving such difficulties. This is an area in which extreme concern must be exercized by the operator of a fabric-foam laminator. Any flaws or distortions—in either the foam or the fabric—delivered to the nip of the laminator (the area where the two materials are brought together) will probably cause a permanent impairment of the resulting laminate. Thus it becomes obvious that the laminator must display and maintain competence in this phase of his operations, as well as in the subsequent operations he performs.

The lamination of foam to fabric—our third major area of concern—can be achieved by either of two basic techniques. These are: (a) flame, or fusion, lamination, or (b) adhesive lamination. Both methods of lamination have met with reasonable success, yet each has proved to have certain limitations. Again, we come face to face with the problem of selection of fabrics for a particular end-use application. This should not be the responsibility of the laminator. Rather, this is a problem that should be resolved by market-testing pre-production samples of the end product.

Having established the acceptability of the laminate in question, steps must now be taken to assure continuing delivery at the quality standards required. This is, perhaps, the area of greatest importance, and deserves far more consideration and attention than has heretofore been evidenced.

Standards Urgently Needed

Any lamination process employed to bond fabric to foam operates under variable conditions. The success with which these inherent process variables are controlled will obviously influence the quality or uniformity of the resulting laminate. Purely from the standpoint of self-interest, the need for reliable standards of acceptance for every laminate produced becomes vital. These so-called standards of acceptance must serve two essential functions: They must provide a reasonable basis for acceptance and rejection of foam-laminated fabrics as produced by the lamination process; and they must also provide the laminator with fundamental information to which he can apply his process control program.

This is not as frightening a task as it may appear at first glance. Several relatively simple tests can be employed to provide a reasonably valid indication of how well the laminate will stand up under the demands anticipated for end-use service. The scope of the testing program and the nature of individual tests will be contingent, of course, upon specific customer demands. Certain requisites which may serve as a base on which to build an effective standards and control program might be the following:

A. Dry Bond Strength—The dry bond strength developed between the foam and the fabric should be tested, and used as a process control feature of the

lamination process employed. One means of determining this property is to select representative samples of the laminate and mechanically measure the force necessary to tear the foam from the fabric. This can be done by taking several strips cut one inch wide and approximately four inches long from both the machine direction and the cross-machine direction of the laminate. Peel by hand one inch of foam from the fabric. Clamp the ends thus exposed in the jaws of a tensile testing machine, with the fabric in the upper jaw, (Scott Testers, Inc. Model X-5 will serve this purpose) and pull the materials apart by operating the machine at a speed of six inches per minute. Note and record the minimum force required to pull the foam from the fabric (oz./in. of width).

In most cases where the fabric-foam lamination has been properly controlled, the test described above will result in "foam tear". Fabric characteristics will influence the ultimate bond strength that can be achieved; therefore, minimum values for dry bond strength should be established for each individual fabric laminated.

B. "Wet" Bond Strength (Laundering)—In most cases it is important to know how well the fabric-foam bond holds up when subjected to laundering operation. This property can be studied by a relatively simple test. Prepare a one litre or one gallon solution of 1% by weight Ivory soap flakes and tap water. Mix well and heat solution to 160°F. Add four test strips as prepared in A, above, and stir gently for ten minutes. Drain and rinse strips in lukewarm water. Test strips while wet as outlined in procedure for Dry Bond Strength Testing.

Values for this test should be reported as the minimum force (oz./in. of width) to pull foam from the fabric. Minimum acceptable values should be established for each of the fabrics employed.

C. "Wet" Bond Strength (Dry Cleaning)—Fabric foam bond strength of the laminate will be influenced by dry cleaning solutions, sometimes to the degree that the fabric of the laminate is completely unsatisfactory for the use intended. To test this properly, a solution can be made by mixing three parts (by volume) formula 886 soap of R. R. Street & Co., six parts (by volume) water, and ninety-one parts (by volume) perchlorethylene. A one pint test solution in a closable jar is sufficient. Add four test strips (cut as described in section A), close jar tightly and shake for ten minutes. Drain off test solution and rinse strips twice with 100% perchlorethylene. Remove strips from jar, drain off excess solvent from strips, and test while wet as outlined in A, above.

The characteristics of the fabric in question, and the type of adhesive employed, will exert a profound influence on the strength of the bond during dry cleaning. Minimum bond strength values that fulfill the requirements of end-product usage must be established for every fabric laminated.

Dimensional Change (Shrinkage)—Any foam-laminated fabric subjected to laundering or dry cleaning in end-use must be tested to determine the adequacy of the bond strength of the laminate while wet and the shrinkage characteristics of the laminate when cleaned in accordance with the manufacturers' recommendations. Laundering and dry cleaning tests of all types have long been employed by the textile industry. These, in conjunction with dimensional stability (shrinkage) tests must be made on all foam-laminated fabrics subjected to this type of service. Any of the standard methods of testing for these properties should be acceptable, provided the test simulates accurately the conditions to be encountered in actual end-use.

Obviously, the above tests are by no means a complete measure of the total usefulness of the product, but even this elementary program will indicate the general level of quality and uniformity of the laminates being produced. They can be used to detect inferior work *before* further processing—and its attendant costs—is undertaken. They may possibly prevent claims or customer dissatisfaction which will very likely follow sub-standard goods to the market. And finally, such a program will help to prevent the exploitation of laminates in end-use markets which they cannot adequately serve.

How do we develop and maintain a practical testing program for our particular operations? The Technical Service Department of the Foam Division, Scott Paper Co., will provide Scott customers with any technical assistance or cooperation requested in establishing this function. Independent sources of information and help are available from the technical societies, or associations, active in this field. The American Association of Textile Chemists and Colorists, The American Standards Association, and The American Society for Testing Materials could all provide material assistance in design, scope and application of specific physical tests. Better Fabrics, Inc. and U. S. Testing Co. are but two of many capable independent testing organizations which can provide a completely integrated testing service.

If all of us who are a part of this constantly expanding foam lamination program will recognize the complexities of the operation, the responsibilities each must share, and the necessity for mature, intelligent judgment, we can conclude that we have, indeed, a virtually unlimited horizon for the utilization of foam-laminated fabrics.

Vinyl Foam Patent Issued

A patent on a technique for foaming sheet plastic laminated to a fabric backing has been issued to P. E. Roggi and R. A. Chartier, both members of the Marvinol vinyl resin research and development department, Naugatuck Chemical division, United States Rubber Co. About eight companies now use this process to make outerwear for men, women and children, footwear, handbags, furniture and automotive upholstery fabric, with other firms planning to enter these fields.

The foam is made through the use of a chemical blowing agent; it is blended into a specially formulated vinyl compound before it is formed into a sheet. After a sheet has been laminated to a fabric backing, the laminate is heated to cause the blowing agent to turn into a gas, which is trapped in tiny bubbles within the plastic film, causing the film to expand into a foam form.

Marvinol vinyl resins and the Celogen AZ blowing agent used in the process are made by Naugatuck Chemical, which is reviewing the possibilities of licensing the foamed laminate process to both domestic and overseas firms.

Broader Market for Color Urged

Promotion of color in textiles must be geared to the specific needs of a specific market in order to show up in higher profit margins, according to Arthur N. Adlman, Senior Associate of Werner Textile Consultants, New York. Speaking at a dinner meeting of the Metropolitan Section of the American Association of Textile Chemists and Colorists, Adlman urged the formation of a marketing committee under the auspices of the AATCC for the purpose of studying the markets that offer the greatest potential for the use of dyestuffs and translating the findings into programs that will help create broader market opportunities for color in textiles.

He said that more and more textile men realize the power of color in their marketing and merchandising concepts. "Color is not only required to sell a product, but it must keep the product sold and create additional sales," Mr. Adlman states. "However, promotion of color in itself is ineffectual. To be meaningful in the cash register, the promotion must be geared to a pre-selected and well defined market."

"In addition to developing even better dyestuffs and processes, you can make a most valuable contribution to the progress of the textile industry by uncovering new areas of opportunity for your customers," he told the AATCC.

Rather than promoting the use of color in general to all phases of the textile industry, the speaker suggested that a thorough analysis of end-use categories be undertaken before further color penetration of a market is attempted. He said that once the potential market has been pinpointed, color penetration can be attempted in these ways: by converting white into color; by converting pastel shades to darker shades; by converting more products to fast colors.

Improved Cotton Shirt Finish

Phillips-Van Heusen Corp. and the Chemical Group, General Aniline & Film Corp., have jointly developed a new non-resinous textile finish for men's cotton shirts said to provide wash-and-wear qualities better than any resin finish. The finish is called Ganalok; the shirt the Van Heusen Century Vanalux.

The new shirts, retailing for $5 each, will be available this fall. The shirt company says they can "be spin-dryed, tumble-dryed, drip-dryed, or commercially laundered, with the same fine results." They are reported to have the porosity of untreated cotton fabric and be more wrinkle-resistant than fabrics with resin finishes. The Chemical Group's director of research and commercial development, Dr. M. R. Stevinson, calls the new finish "a significant development in the chemistry of cotton finishing because it is not a resin. In its action it combines with cotton but does not itself polymerize with the resultant tendency to impart stiffness or harsh hand."

New Finish for Cottons

Cotton fabrics that are not only wrinkle-resistant but resist the tendency to "yellow" during laundering may come from a new chemical treatment described to the American Chemical Society recently. The treatment, said to be superior to commercial cotton finishes, is based on an agent called diglycidyl ether which is "extremely durable to washing," according to E. W. Jones, senior chemist of the research and development division of Cone Mills Corporation, Greensboro, N. C. In certain different formulations it increases tear-strength of the cotton, he said.

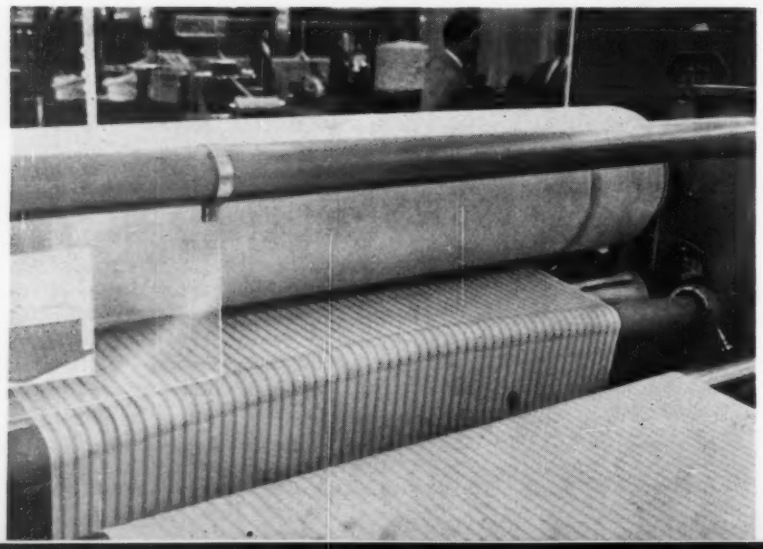
Most commercial finishes use nitrogen compounds which have poor washfastness and "exhibit the undesirable property of retaining chlorine, which upon the application of heat, produces tendering and yellowing of the fabric," the chemist explained. To avoid these disadvantages the finishes of cellulosic fabrics must use compounds that contain no nitrogen capable of chlorine retention.

Such a compound is diglycidyl ether, under proper conditions of application and cure, Jones told the ACS Division of Cellulose Chemistry. The chemical finish is not yet commercially available.

The mechanism by which chemical treatments impart crease recovery to cellulosic fabrics is not completely understood. However, Jones pointed out, it is generally agreed that chemical cross linking within the cotton fiber is a basic requirement. This cross linking also is considered to improve wash-wear rating and muss resistance, he said, continuing:

"The cool, porous comfort of cotton and other cellulosic fiber garments is far superior to that obtainable in present day synthetic fibers. However, in recent years, there have been a large number of synthetic fibers available for use in garments that can be washed and dried easily by the wearer and worn again with little or no ironing. In efforts to obtain 'easy care' properties for cotton competitive with those in some of the synthetics, chemical and textile manufacturers have spent considerable research efforts in developing chemical treatments for cotton."

James A. Rayburn, also a Cone Mills chemist, was coauthor of the paper.



Rodney Hunt's new Aquatrol Expander

Bow Spreader Roll

The Aquatrol Expander, a new bow spreader roll, is described in a 4-page bulletin issued by the Rodney Hunt Machine Co. The new roll design is said to embody a new principle of operation. With only one moving part—in contrast to the many moving parts of the conventional bow roll—the Aquatrol Expander operates with little friction, the manufacturer reports. The single moving part is a rotating rubber sleeve that floats on a film of water to give uniform spreading action over every increment of face width.

TO IDENTIFY
synthetic fibers by generic class—
TRY THIS METHOD

By T. D. Miles &. F. A. Hoffman
QUARTERMASTER RESEARCH & ENGINEERING COMMAND

THE PROBLEM of identifying fibers in acceptance testing of fabrics differs from that of the usual fiber identification problem. A fiber is specified in the procurement contract and the identification method is required to verify that the fiber delivered is the one specified. This is a much more limited problem than the identification of an unknown fiber. A further limitation is that only the generic class of the fiber is usually specified. The limited nature of this problem permits the development of a rapid method designed for routine testing, eliminating many of the steps that are required in methods designed to establish the trade name of the unknown fiber. Based upon the methods that are available in the literature, (see bibliography attached) particularly those based on the optical fiber properties such as the methods of S. G. Smith, the following method has been devised for use as a fiber identification method for acceptance testing. It is limited to fabrics that are made of one type of fibers or blends and fabrics that can be separated before identification. The following generic types are included in the method: acetate, triacetate, acrylic, fluorocarbon, glass, modacrylic, nylon, nytril, olefin, polyester, rayon, saran, vinal, and vinyon. Metallic and elastic fibers such as rubbers and spandex are not included. These are readily identified qualitatively—the metallic by appearance and the rubber and spandex by their elastic properties.

Test Method

This method is intended for the identification of synthetic fibers as a generic class. It is not intended for use on blends that cannot be separated prior to identification nor is it intended for the identification of the various fibers within the same generic class.

Apparatus and Reagents

Any compound microscope having facilities for the attachment of polarizing discs or a polarizing microscope may be used. The polarizing discs are inexpensive and convenient to use. One disc is placed in the eyepiece of the microscope and the other in the substage condenser. When examining for polar colors, both discs are used. When Becke line determinations are made the disc in the substage condenser is removed leaving the eyepiece disc as the analyzer.

Definitions

Parallel—Refers to orienting the fiber's long axis parallel to the plane of vibration of the analyzer.

45° Examination—Refers to the angle at which the fibers exhibit the highest colors, i.e., at 45° to the planes of vibration of the crossed polarizers.

Becke lines— Bright lines caused by the reflection and refraction of light at the margin between the fiber and immersion liquid.

In addition to the microscope and polarizing attachments, the following apparatus and reagents are also required:

Microscope Illuminator
Hydrometer
Glass Slides
Cover Slips

Anthrone
Methylene Chloride/Ethanol (90/10 by volume)
Mineral Oil
Monochlorobenzene
Cassia Oil
Benzyl Alcohol
Sulphuric Acid (conc. 98%)
Toluene
Methylene Chloride
Density Liquids

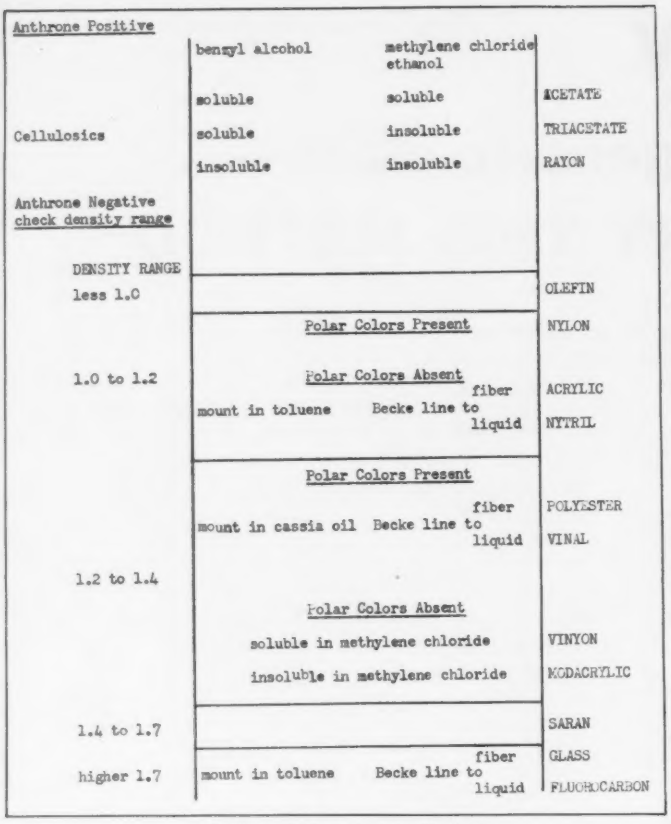
Density Liquids—Four liquids of known density are required. These are 1.0, 1.2, 1.4, and 1.7. For 1.0, water (with a few drops of wetting agent added to reduce surface tension so that fibers with water resistant finishes will be wetted) is satisfactory. For 1.2 and 1.4, carbon tetrachloride and benzene are mixed to the specified density in a graduated cylinder using a hydrometer. For 1.7, bromoform and carbon tetrachloride are mixed in the same manner. It is convenient to keep the solutions in glass cylinders suitable for accepting a hydrometer so that the density can be easily rechecked.

Procedure

Cellulosic—The fiber specimen is placed in a few ml. of the conc. sulfuric acid in which several crystals of an anthrone have been dissolved. Several drops of water are added. If cellulosic fibers are present, the solution develops an intense opaque blue color. When cellulosic finishes are present on synthetic fibers the solution may develop a blue tint; however, this is easily distinguished from the intense opaque blue color of the positive test. If the test is positive, separate portions of the test specimen are placed in a few ml. of benzyl alcohol at 50°C. and a few ml. of the methylene chloride-ethanol solution at room temperature. If the fiber is soluble in the former but not the latter, the fiber is TRIACETATE. If the fiber is soluble in both, the fiber is ACETATE. If the fiber is insoluble in both, the fiber is RAYON*.

Non-Cellulosic—If the anthrone test is negative, the density range of the fiber is determined. The fiber specimen is tied into a knot if the form of the speci-

* Note: Cotton which is readily recognized under the microscope is also insoluble in both.



Outline of Identification Method

men permits this. The excess fiber is cut off close to the knot. The knot is placed in boiling benzene to remove any entrapped air. It is then placed (using a tweezer) below the surface of the liquid of density 1.0 and released. Whether the fiber floats or sinks is recorded. This procedure is repeated for each density liquid (taken in order of increasing density) until the fiber specimen floats in one of the liquids or sinks in all. The density range of the specimen is recorded (i.e., less than 1.0 if its floats on the surface of that liquid; between 1.0 and 1.2 if it sinks to the bottom of the former liquid and floats on the surface of the latter, etc.).

Fibers in the density range less than 1.0 are OLEFIN.

Fibers in the density range 1.0 to 1.2 are NYLON, ACRYLIC, and NITRIL. Fibers in this density range are mounted in mineral oil and examined with the microscope equipped with crossed polarizers. Those exhibiting polar colors are NYLON. Those exhibiting no polar colors except low order gray or silver are mounted in toluene and examined under the microscope equipped with the eyepiece analyzer only. The fibers are examined parallel (See Definitions.) The direction of movement of the Becke line is noted as the microscope is focussed up. If the Becke line moves towards the liquid, the specimen is a NYTRIL. It it moves towards the fiber, it is an ACRYLIC.

Fibers in the density range 1.2 to 1.4 are POLYESTER, MODACRYLIC, VINAL, or VINYON. The specimen is mounted in mineral oil and examined with the microscope equipped with crossed polarizers. Those exhibiting no polar colors except low order gray or silver are MODACRYLIC and VINYON. The fiber is placed in methylene chloride at room temperature. If the fiber is soluble it is VINYON. If the fiber is insoluble it is MODACRYLIC.

Those exhibiting polar colors are mounted in cassia oil or liquid of refractive index 1.60 and examined under the microscope equipped with the eyepiece analyzer. The fibers are examined parallel. (See Definitions.) The direction of the movement of the Becke line is noted as the microscope is focused up. If the Becke line moves towards the fiber, it is a POLYESTER. If the Becke line moves towards the liquid, the fiber is a VINAL.

Fibers in density range 1.4 to 1.7 are SARAN.

Fibers in density range greater than 1.7 are GLASS and FLUOROCARBONS. The specimen is mounted in toluene and examined with the microscope equipped with the eyepiece analyzer only. The fibers are examined parallel. (See Definitions.) The direction of the movement of the Becke line is noted as the microscope is focused up. If the Becke line moves toward the fiber it is GLASS: if it moves toward the liquid it is FLUOROCARBON.

A schematic outline of the above procedure is shown in the Table at left.

Acknowledgment

The authors wish to express their appreciation for comments on the first draft of the method by S. G. Smith of Security Mills, and the members of the ASTM Task Group on Fiber Identification under the Chairmanship of A. L. Smith of Chatham Manufacturing Company.

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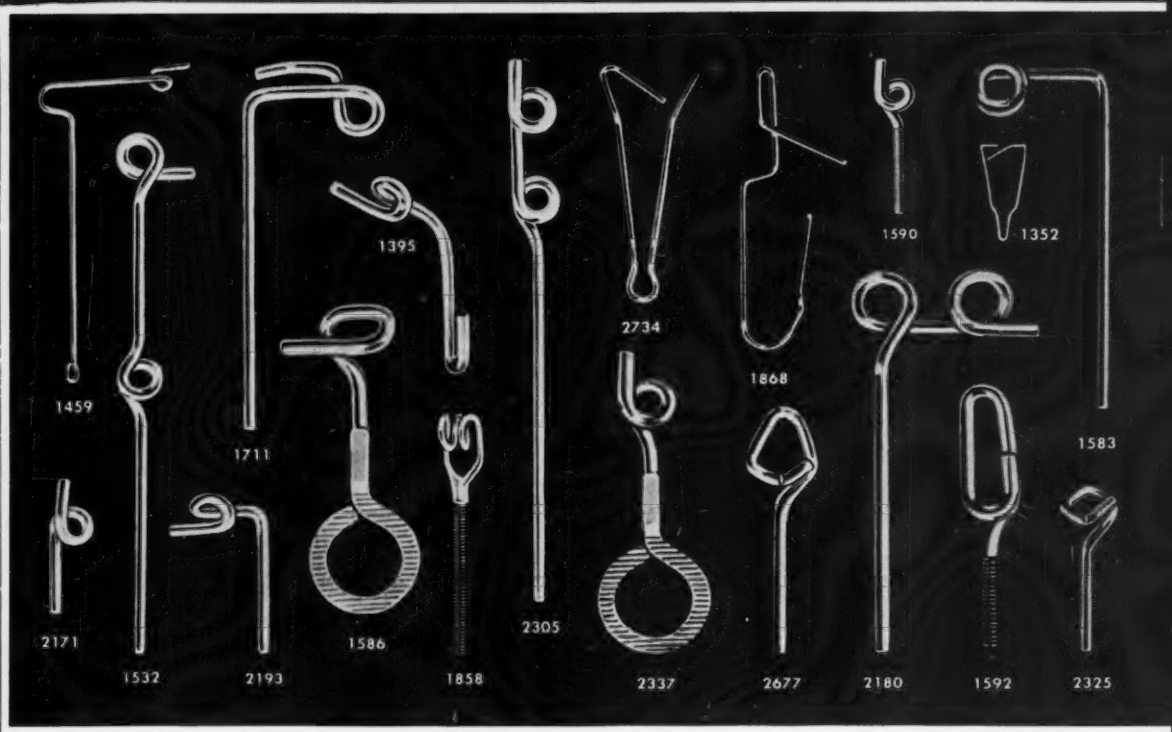
New Dyeing Plant Opens

United Piece Dye Works recently placed in operation in Bluefield, Va., a new plant for dyeing and finishing fabrics composed of all the manmade fibers in 100% form, in blends with one another or with natural fibers. The 147,000 square feet, single-story structure is said to be equipped with modern equipment for handling diversified types of fabrics in the present wide range of fiber blends.

To keep pace with fiber and fabric innovations in textiles a research and development laboratory is being established in the Bluefield plant which supplements the company's production facilities at Charleston, S. C., York, Pa., and Los Angeles, Calif.

Cadon Nylon Price Increase

A price increase of 15 cents a pound was announced last month by Chemstrand Corp. for its Cadon nylon multilobal filament yarn. The increase applied to 1040/68 and 1230/68 denier RSD Cadon bringing the price from $1.30 to $1.45 for the standard grade and from $1.20 to $1.35 for second grade.



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Special care is employed in the plating of Mitchell-Bissell Chromium Plated Steel Wire Guides to assure maximum density, hardness and uniformity. Our methods of fabricating and polishing develop a surface smoothness far beyond usual commercial standards. Because of their superior resistance to thread wear, these guides have proven ideal for processing all modern synthetic fibre yarns and blends. More than 3,000 patterns. Special patterns to your specifications. Can be supplied in mirror, satin or matte finish. Samples and Catalogs on request.

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Southern Representative: HOLT ASSOCIATES, INC., *Greensboro, N. C.*

NEW Equipment Machinery

Anti-Static Cleaner

The Simco Co. has placed on the market its new anti-static cleaner, which combines a brush, a



shockless static bar and a suction hood. The part to be cleaned is first mechanically brushed to remove dirt and dust, then neutralized to prevent re-attraction of the dust, while the suction picks up any remaining dirt that the brush has left. The device is especially useful for plastic parts, Simco reported. The cleaner is available in any effective length for all sizes of parts and materials. *For further information write the editors.*

Warp Tying Machine

H. J. Theiler Corp. is marketing in the U.S. the "Knotex" warp tying machine, manufactured in West Germany. The unit, now in use in mills throughout the world, is compact and ties any fiber (except jute, rubber, yarns and glass) in 35% to 80% less time than is required by hand tying, according to Theiler. Machine speeds vary up to 600 knots per minute, depending on the fiber and yarn count. It can be used in or behind the loom or in a stationary set-up. *For further information write the editors.*

Boyd Spinning Frames

Ralph Gossett and Co. is now acting as exclusive agent in the United States for J. & T. Boyd, Ltd., of Glasgow, Scotland, to handle the sale of Boyd spinning and twisting frames.

The Boyd high draft ring spinning frame can spin worsted, worsted and synthetic mixtures and synthetics; oiled or dry. Some of its features are: spindles are driven by an endless belt, with no cylinders or tapes; the draft can be up to 20 (there are no aprons); width of the frame is only 3 feet 2 inches; and each side of the machine is totally independent and can be run at different speeds, different twists and different drafts, and doffed separately. *For further information write the editors.*

Lindly Auto-Calibrator

Lindly & Co., Inc., is marketing its Auto-Calibrator model 1080 to the textile industry through Foster Machine Co. The portable electronic device is reported capable of both calibrating and automatically checking the sensitivity of Lindly yarn inspectors. The new model can be utilized in either or both of two ways. A flashing light on the panel of the control unit indicates whether or not sensitivity has been decreased.

The model is entirely electronic in operation and is equipped with its own power supply; it can be connected to power sources of either 115 or 230 volts AC. Its use in conjunction with the new Series 1000 fully transistorized yarn inspectors, or with the older Series 600 equipment, is said to provide maximum assurance of trouble-free yarn inspection with a minimum degree of operator skill. *For further information write the editors.*

Visual Yarn Inspection

United States Testing Co.'s Instrument and Apparatus Division has issued new literature describing the Seriplane, a device developed for visual inspection of all types of yarn. The Seriplane can be used to detect imperfections and for gauging evenness, neatness, and cleanness of natural, manmade or blended yarns. Wide panels provide for multiple sets of yarns which may be wound and inspected simultaneously. These panels, when compared with photographic standards provide a basis for systematic, numerical grading as prescribed by the U.S. Agriculture Department, the American Society for Testing Materials, and the International Silk Association. *For further information write the editors.*

New Cloth Inspector

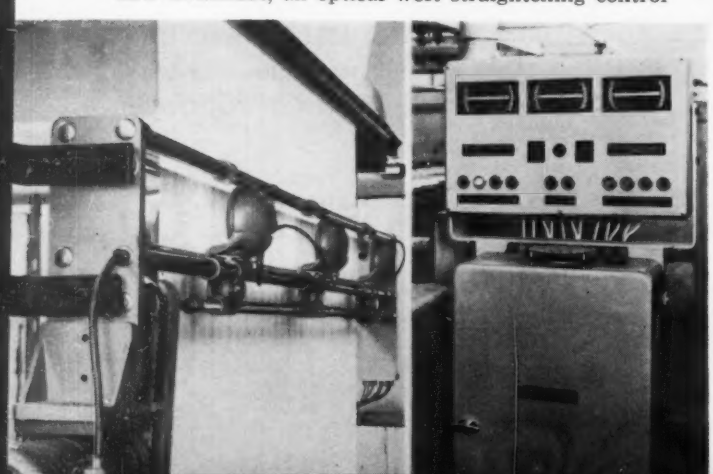
Birch Brothers, Inc., has developed a new cloth room machine for inspecting cloth from loom rolls. The machine is fitted with a cradle and a divided inspecting table with through lighting panels so that both sides of the fabric may be inspected in one run. The delivery end is fitted with a surface wind-up. The control for forward and reverse is at the operator's position. *For Circular No. BB-971 describing the machine, write the editors.*

Brush Gin and Feeder

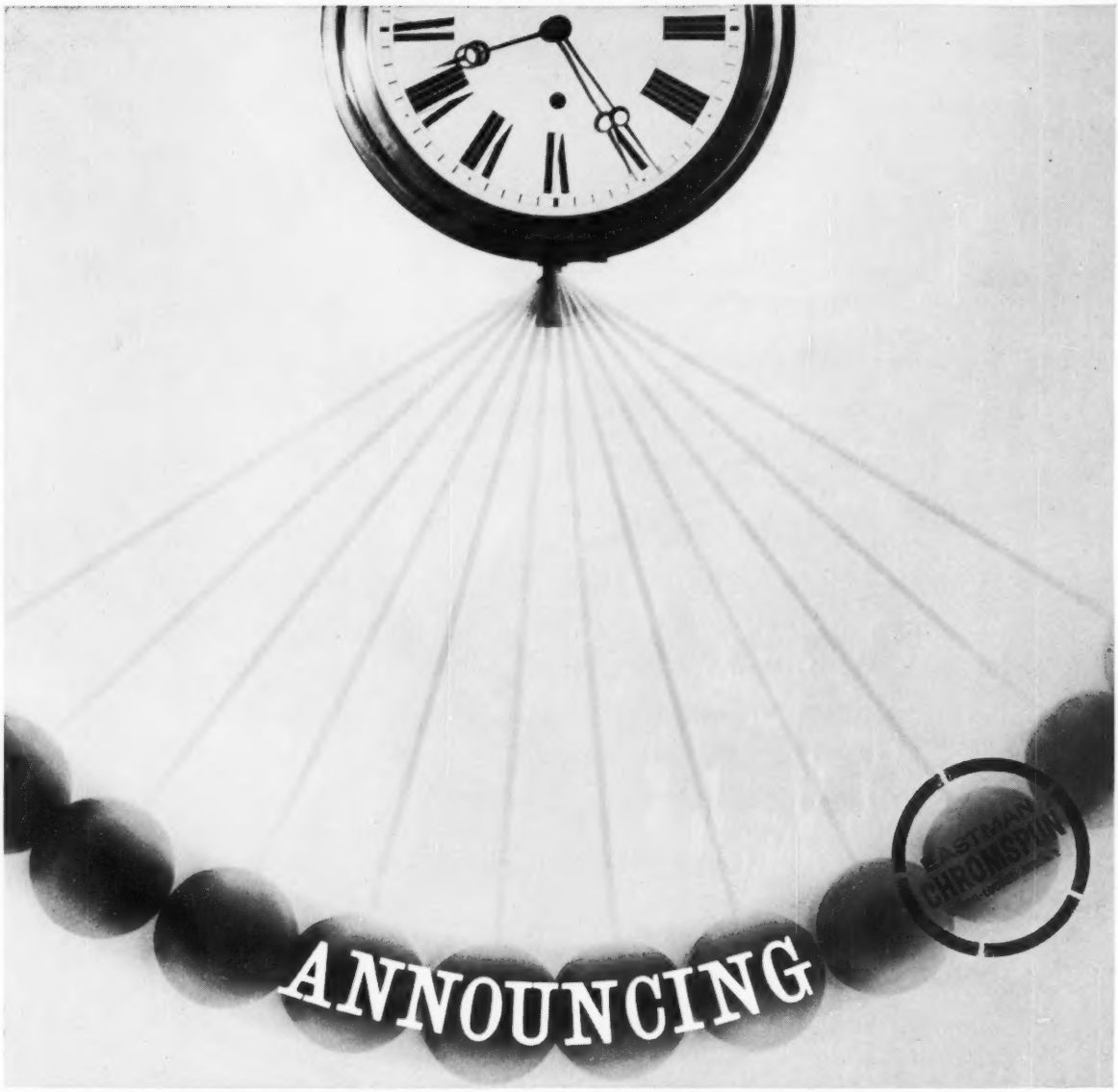
Continental Gin Co. has developed a new, high-capacity automatic brush gin and feeder. Continental reports the gin-feeder combination has loose roll operation and does not require mechanical roll agitation. It features 16-inch high tensile gin saws. Available in two sizes, the new gins offer optional brush or air blast doffing in the same gin frame. The companion feeder, linked automatically for synchronization with the gins, features the sling-off principle of extraction.

New Weft Straightening Device

Mount Hope Machine Co., Inc., is marketing its new Orthomat, an optical weft straightening control which may be used to automate either existing or new bowed and skewed weft straightening equipment. The Orthomat automatically brings weft straightening equipment and differential tenters into operation. Three detector heads, one on each edge and one in the center of the cloth, operate in conjunction with corresponding projectors. Direction of the weft threads is visually recorded on three individual direction indicators located on a control panel. When distortions occur, control impulses are transmitted to the respective motors of the skew or bow straighteners. Impulses continue until the weft threads are straight and all three indicator pointers have returned to their normal horizontal position.



The company has published a new folder on weft straightening equipment which provides technical information on the various types, including push-button control, automatic optical control, and automatic electro-mechanical control.



3 new up-to-the-minute colors in CHROMSPUN® acetate

Again Eastman heeds the swing of the fashion pendulum to bring you the colors of the hour in apparel and home furnishings:—

Alpine Blue 335 is a new Chromspun hue that follows the trend toward blues with a warmer cast.

Fiesta Pink 336 is a rich raspberry pink with the vitality so important now in fashion and decoration.

Regal Violet 337 expands the Chromspun color range in the rapidly growing orchid-to-purple family.

And don't forget the new Chromspun Diamond White 332 for a more dramatic white, introduced earlier this season. This is the kind of timing that has kept Chromspun ahead in color thinking . . . ever since it became the first commercial solution-dyed color line in America ten years ago.

Chromspun is the trademark for Eastman color-locked acetate fiber

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. . . new tools to use when you need the fastness, quick-drawing and level-dyeing characteristics of neutral, premetallized types

Here are five new dyes that greatly extend the range of shades you can produce with the versatile Lanamids.

With all the well-known advantages of this superior class of dyestuffs for wool, nylon and modified acrylics, these new Lanamids are applied in a neutral or weakly acid bath without prolonged high-temperature processing.

Fine wool fabrics are dyed with minimum impairment of their natural qualities. Hand is improved and special weaving effects such as friezes and boucles are preserved.

Although they exhaust rapidly, Lanamids build up evenly from the initial strike. Dyeings on wool piece goods are extremely level. Varying grades of wool dye uniformly without tippy, heathery or skittery effects.

Lanamids are highly recommended for carpet wools, wool blends and unions, continuous raw stock dyeing and nylon upholstery fabrics.

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Your National Aniline representative will gladly provide samples of the Lanamid Dyes.



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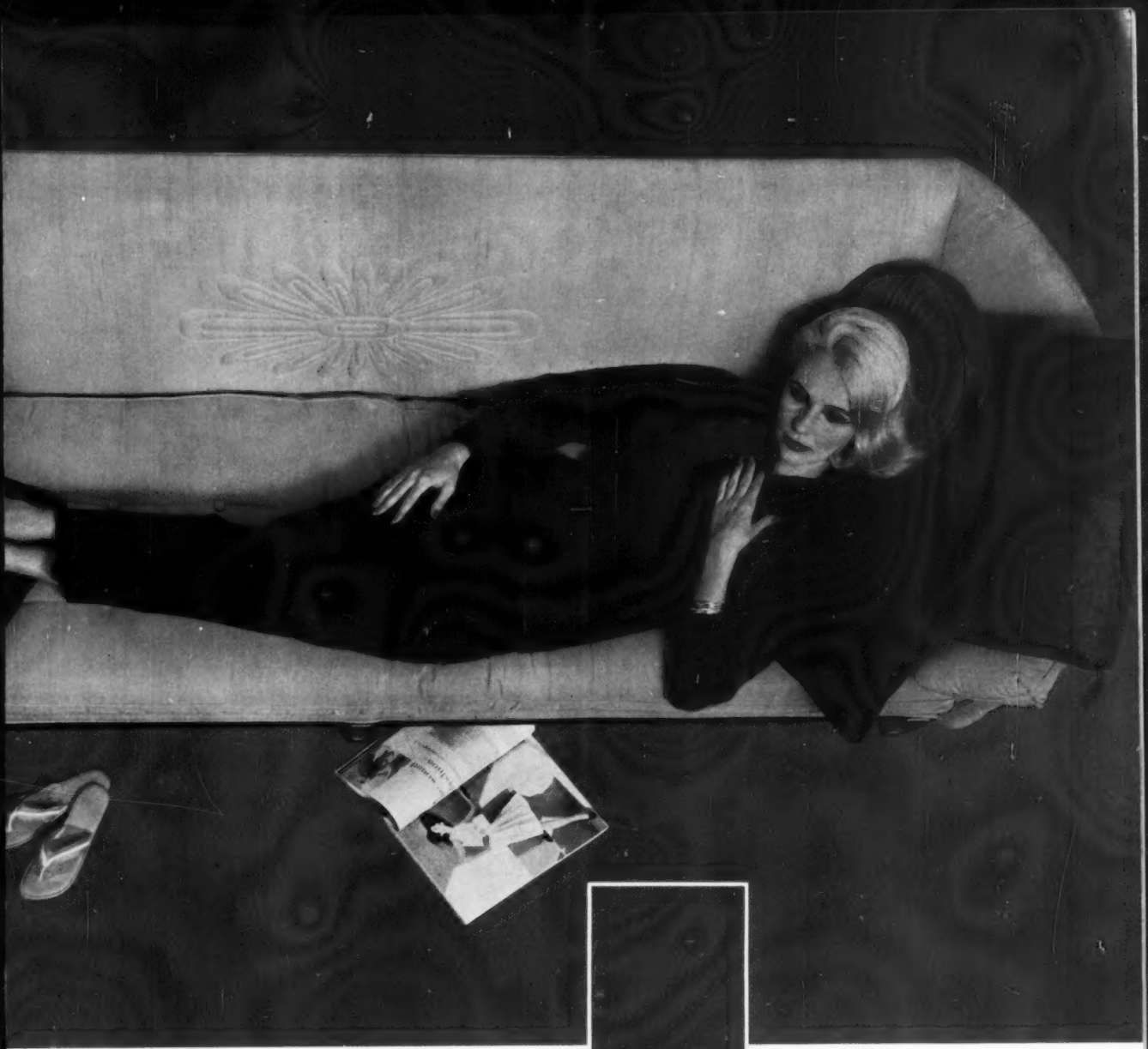
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These giant packages — the result of combining the productive capacity of the Pacemaker Model P Twister with the flexibility of the Type C1 Novelty Yarn Attachment, make possible king–sized savings, too — savings such as: a major reduction in knots; sizeable reductions in doffing and maintenance time; and greater production per square foot of floor space.

The Pacemaker Model P is a competitive, high speed, skillfully-built Twister capable of producing, with little or no loss in operating speed, bobbins of 11" traverse and up to 5" in diameter, using 5½" diameter rings.

The famous Whitin Type C1 Novelty Yarn Attachment already has an established reputation for excellent performance based on its precision, its simplicity and its versatility.



FEATURES:

- Fewer knots
- Reduces doffing time
- Reduces maintenance time
- Greater production per square foot of floor space
- High-speed operation
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In bringing together this unusual cost-cutting combination, Whitin effectively meets today's increasing need for large knotless packages in the heavy fabric field — for products such as domestic upholsteries, automobile fabrics, rug yarns and draperies.

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CHARLOTTE, N. C. GREENSBORO, N. C. ATLANTA, GA. SPARTANBURG, S. C. DEXTER, ME.

The best way to better yarns

ACMI Meeting

(Continued from Page 22)

to such factors as increased competition from other materials such as plastics and paper, a shift in consumer expenditure patterns, and the sharp rise in imports.

The Secretary mentioned the action taken by Japan in 1957 to regulate cotton textile exports to the United States, saying it had the defect of its virtues—that is, it has covered only one source of imports. . . ."

He noted that since 1958 exports of cotton manufactures from Hong Kong to the United States increased 352%, from Spain, Egypt, France and Portugal 4,500% and from Formosa, Korea, Pakistan and India 1,300%. He admitted that these new shippers complicated the voluntary quota situation which, he added, might be expanded through international agreements.

Hodges urged the industry to enlarge its markets, its capital expenditures for new plants and equipment and its research and development expenditures, particularly in the area of new end uses which might recapture the industrial market.

Fresh Study Urged

J. M. Cheatham, in his President's Annual Address at the opening session of the meeting, shed light on some of the industry's perennial problems. For example, he suggested that the industry, at times, seems to be too preoccupied or blinded by price competition in the gray goods markets. He urged greater study of other factors that affect textile consumption—social trends, economic developments, the influence of fashion changes, consumer's whims and the psychology that enters a consumer's thinking before buying.

He also advocated a new evaluation of existing and projected promotion possibilities, new approaches to old techniques and better knowledge of competitive forces inside and outside the industry. He also dwelt at length on the need for better public understanding of the industry, its purposes, its problems and its products.

To provide a firm foundation for its public relations program, the ACMI undertook the first extensive public opinion survey ever conducted for the American textile industry. It was explained to the meeting by Walter G. Barlow, president of Opinion Research Corporation, Princeton, N. J. He said that the survey indicates that the general public has a widespread lack of knowledge about the industry and that it fails to achieve the acclaim enjoyed by the automobile, drug, chemical or steel manufacturing industries—all because of a lack of information.

General public attitudes toward textile manufacturing are mixed, he explained, although the industry is generally regarded as having improved fiber quality, seeking new product uses, being research minded, alert to changing consumer needs, providing steady employment and a large number of jobs by being a large industry, having modern plants and equipment, having an important role in the defense effort and paying its fair share of taxes. Survey respondents who indicated awareness of the high volume of textile imports cited compulsory labeling of imports and forced quota restrictions as the most effective ways to counter foreign competition.

Less Production Recommended

Economic aspects of the industry's operations other than foreign trade were not overlooked. Dr. William H. Miernyk, director of the Bureau of Business and Economic Research at Northeastern University, Boston, told the meeting that the textile industry's economic cycle can be minimized through the use of a "set of analytical tools", including statistical analysis, development of a mathematical model, and use of simulation to work out production schedules.

Noting that there have been 15 cycles in the cotton textile industry since the end of the first World War, Miernyk said, "The textile industry is more volatile than manufacturing industry in general. The casual observer often assumes that textile activity follows the path of general business activity quite closely. But the statistical evidence on this score is clear. It shows that in textiles there is an independent cycle which coincides only at times with broader fluctuations."

He startled his audience with this observation, "No amount of scientific analysis of the textile cycle will lead to its ultimate control without some changes in management behavior patterns. The impact of the textile cycle is uneven. . . . I am not the first to suggest that management try to eliminate the six-day week during the upswing of the cycle and I am sure I will not be the last. But, I feel reasonably sure about one point—unless the six-day week is eliminated the industry cannot look forward to a more controlled cycle in the future than it has experienced in the past."

R. Dave Hall, Climax Spinning Co., Belmont, N. C. was elected president. He will succeed J. M. Cheatham of Dundee Mills, Griffin, Ga. on October 1, 1961. William H. Ruffin, Erwin Mills, Durham, N. C. was elevated from second to first vice-president. Robert T. Stevens of New York, president of J. P. Stevens & Co., was named second vice-president and thus put in line for the presidency in 1963.

Whitin to Make Milliken Doffer

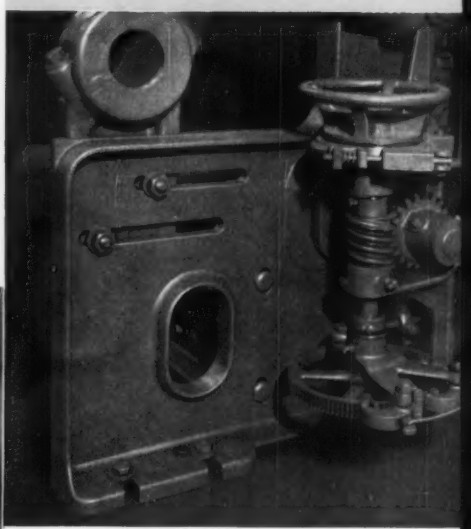
Whitin Machine Works has been licensed by Deering Milliken Research Corp. to manufacture and market its automatic doffing system for spinning frames and twisters, it was made known by J. Hugh Bolton, president of Whitin, at the firm's annual meeting of stockholders. The decision to market the doffer was made, according to Bolton, only after intensive investigation of various automatic-doffing machines and the short and long range of needs of the textile industry for automatic doffing of spinning and twisting frames.

Bolton said that the Milliken equipment is the only type proven in actual mill operation, and is, therefore, ready for early application in most mills. He added that Deering Milliken Mills have already placed orders with Whitin for a number of doffers and said that additional orders will be placed as soon as specifications are written.

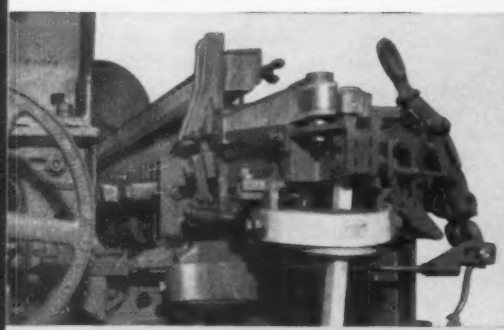
Roger Milliken, chairman of Deering Milliken Research Corp., in licensing Whitin to market the doffer, said that Whitin had been selected out of a number of potential licensees on a competitive basis.

The automatic doffer, has been under development by Deering Milliken Research Corp. more than five years. A production unit has been operating successfully in Drayton Mills, Spartanburg. *For a detailed description of this machine see MTM, April '61 page 39.*

X-3 a new dim



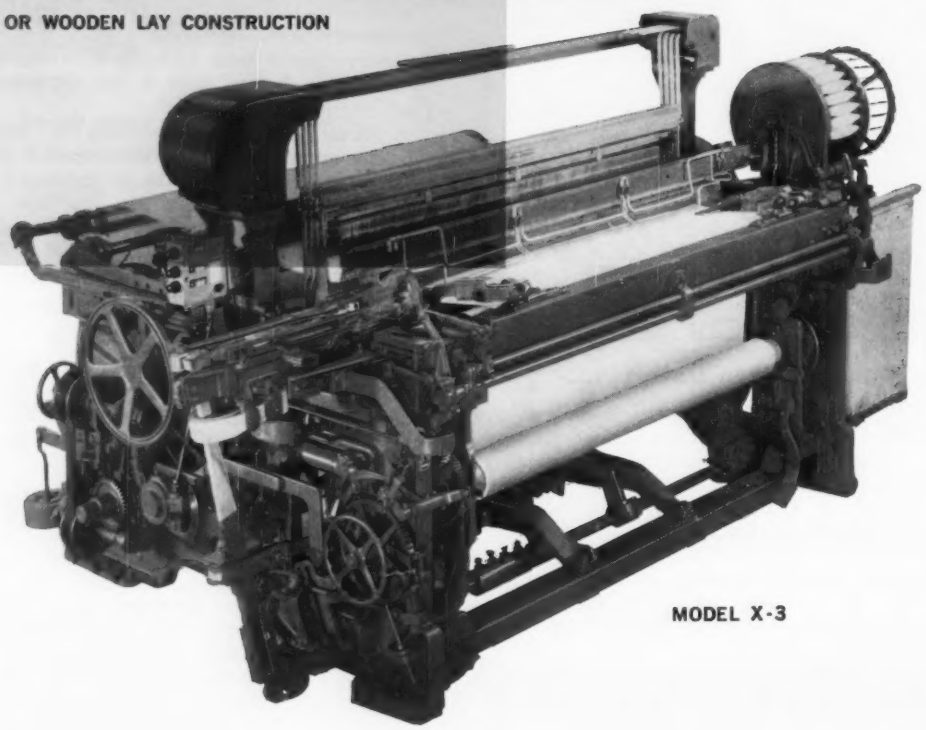
LET - OFFS
Bartlett
Tru-Tension
Hunt





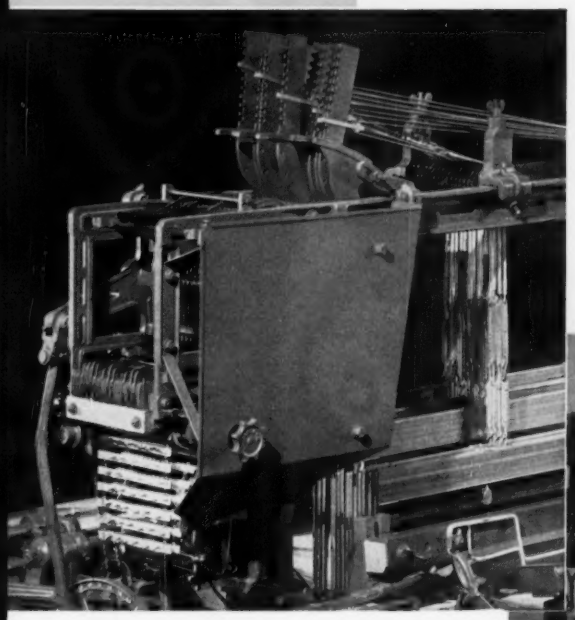
IMPROVED TAKE-UPS
to weave a complete range of Cotton and Synthetic fabrics.

ALUMINUM OR WOODEN LAY CONSTRUCTION

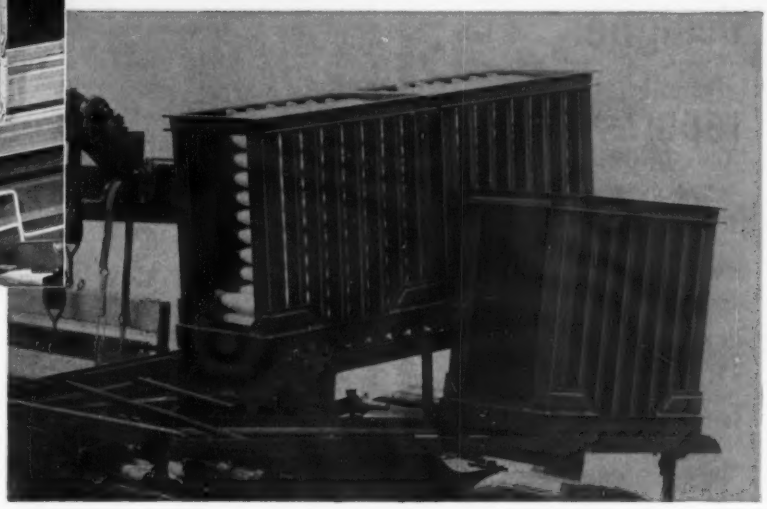


MODEL X-3

ension in weaving



TOP MOTION
New strengthened Dobby — 16 harnesses, 15/32 Gauge
or — 20 harnesses, 3/8 Gauge
Clock Spring up to 6 harnesses



AUTOMATIC FILLING MAGAZINE

The X-3 Model Loom is designed to weave all of the fabrics normally woven on the X-2 and most synthetic fabrics commonly woven on the XD. This loom provides *greater versatility, increased speed, higher quality goods, and lower weave room costs.*

A weight increase of over 500 pounds in frame and shafting*, contributes to added stability, reduces vibration, and permits higher speeds regardless of fabric being woven.

Incorporated in the design of the X-3 are many new materials, parts and mechanisms found to be advantageous to greater loom productivity.

**As compared with a Draper X-2 Model Loom*

DRAPER CORPORATION

HOPEDALE, MASS. • ATLANTA, GA. • GREENSBORO, N. C. • SPARTANBURG, S. C.



PARIS CONFERENCE—French designer Guy Laroche (left) discusses fabrics with Maurice Levin while they examine some samples of cloth from European mills during Levin's recent tour of fashion centers abroad

Back from Old World, American designer reports:

Europe leads U.S. in fabric styling

IN THE OPINION of Maurice Levin, a designer, Europe is ahead of the United States in using manmade fibers imaginatively in new fabrics even though this country leads in the development and production of these fibers. Levin, who directs the designer service center of American Cyanamid Corp.'s fibers division, recently returned from a two-month tour of European fashion and fabric centers. His company produces Creslan, an acrylic fiber.

Levin said that imagination and quality are the principal standards of French mill stylists in creating new fashions from synthetic fibers. He declared that French designers' emphasis on these elements insure a continuing flow of new textures and styling concepts into the market.

As a result, Levin said, fabrics of 100% synthetic fibers, as well as blends, are found everywhere, from couturier fashions to moderately priced garments. Mills serving all markets share a common devotion to quality and fine workmanship, he added, and even inexpensive fabrics reflect their manufacturer's pride in quality and careful workmanship.

French and Italian stores place their stress in selling and promotion on the beauty and color of fabrics, Levin continued, noting that the almost complete absence of labeling does not induce French and Italian mills to take short-cuts on quality or workmanship.

In talking with leading synthetic fiber industry representatives in Italy, Levin said, he learned that one of the country's principal weavers of synthetic fibers first studied the intricate techniques used by the long-established silk industry in the Lake Como area before launching operations in synthetic and blended fabrics.

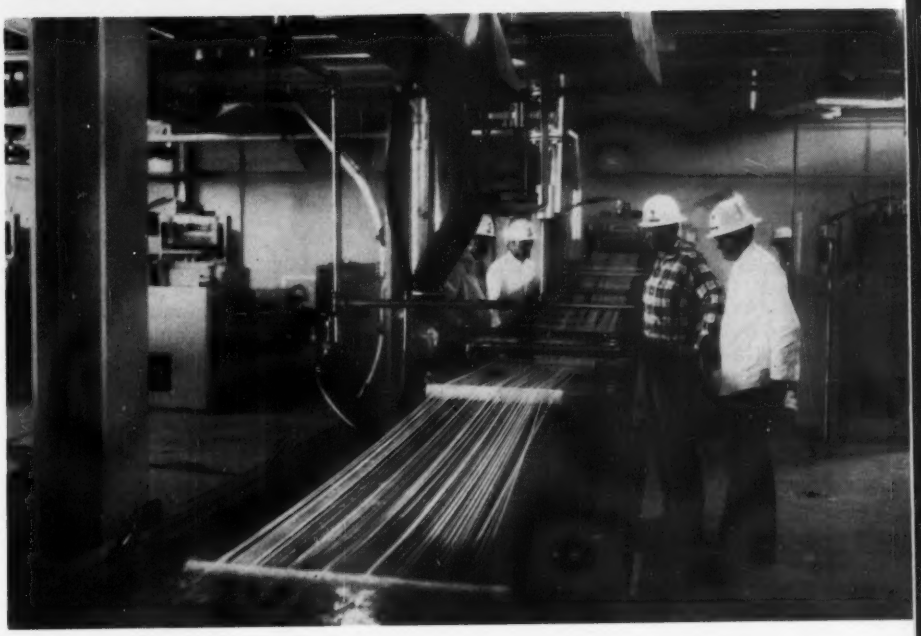
"This manufacturer has brought the care, craftsmanship and know-how of the centuries-old silk industry to his operations," Levin said. "His synthetic fabrics are recognized and respected all over Europe for their beauty, and their silk-like hand."

"English designers place the same stress on quality and imagination in fabrics. The leading designer, Osher of London, selects synthetic and natural fibers with complete impartiality, and with concern only for achieving important design effects. American mills must take this same broad approach to the use of fibers if they are to win a stronger standing with the nation's fashion designers," he cautioned. "U.S. designers now buy European fabrics largely because this country's mills are cautious in making sharp and imaginative departures in design."

Since World War II, he said, the gradual contraction in the number and range of fabrics produced by U.S. mills has served to over-emphasize classical fabrics and mass production, thereby robbing the American mill of its chance to make a real fashion contribution.

Synthetic fibers are the vehicle which can put the elements of daring and imagination back into Amer-

(Continued on Page 49)



PRODUCTION RUN—At Lake Charles, La., plant of Hercules Powder Co., polypropylene molding powder, under heat and pressure, is extruded into a water bath for cooling. Later it is pelletized and shipped to customers

The olefins—newest synthetic fibers

PROLENE'S PROGRESS

Hercules new olefin shows promise in varied end uses; dyeing of fabrics still a problem, producer concedes

MUCH WORK REMAINS to be done before polypropylene fiber can be dyed in a manner that will meet the commercial requirements of wash fastness, light fastness and freedom from crocking as well as resistance to dry cleaning. Considerable progress, however, is being made to overcome these weaknesses. These were some of the points made by Dr. Gilman S. Hooper in a recent talk on Prolene, Hercules Powder Co.'s new polypropylene fiber, before the recent annual meeting of the Textile Research Institute in New York City. Hooper is director of research and development of Hercules' Fiber Development Division.

Based on strength and toughness Prolene should be an "excellent fortifying fiber," he said, although end-use work in this field has been limited. He expressed enthusiasm about the possibilities of rayon-Prolene blends, citing increases in tear and burst strength and abrasion resistance. One of the more promising fields is in pile fabrics, particularly carpets, he indicated, where low density gives high coverage and toughness provides excellent wear. The yarns can be heat set, he said, to retain texture against scouring. As little as 30% in wool permits a "marked degree of heat setting," he said. The fiber also shows good resistance to soiling, he noted, "being even measurably better than nylon in this respect", and "recovers its original appearance well on scouring." It is our hope and belief, Hooper stated, that its many excellent properties and potential low price will enable polypropylene fiber to become an important and widely used addition to the family of fully synthetic textile fibers.

With respect to dyeing of the fiber, he said a group of disperse dyes shows good leveling properties, good resistance to crocking, only fair resistance to dry cleaning, washing and light and generally poor exhaustion, "but they still do a fair job." A group of azoic dyes gives bright colorings with full penetration, good wash and crock fastness and fair to excellent perclene fastness. Light fastness in this group varies from 20 to 80 hours in a Fade-Ometer.

Vat esters have been found to give light shades on the staple fiber, yarn or fabric. They have good fastness to light, with fairly good wash fastness and acceptable fastness to dry cleaning. They give excellent unions between polypropylene and cotton. Hercules has found that light shades of good fastness to light,

(Continued on Page 40)



YARN AND FABRIC—Fine denier filament polypropylene yarn is shown here against a background of experimental drapery and blanket fabrics produced by Hercules Powder Co.

wet processing and dry cleaning can be obtained with a limited group of vat dyes. However, they are difficult to level and present a serious crocking problem if used in heavy shades. It is recommended that the use be confined to stock dyeing of staple fiber.

New Plant Dedicated

To increase output of polyolefins used for Prolene fiber, Hercules recently dedicated a new and second plant at Lake Charles, La. The new plant has a capacity of 60 million pounds a year and augments Hercules first polyolefins plant which has been operating at Parlin, N. J. since 1955. Under construction also at Lake Charles for scheduled completion in 1962 is a second 60 million pound olefins production unit. When completed it will give Hercules a total capacity of 200 million pounds a year of high density polyethylene and crystalline polypropylene. Both materials have found wide uses in the plastics industry and show great promise in film and fiber.

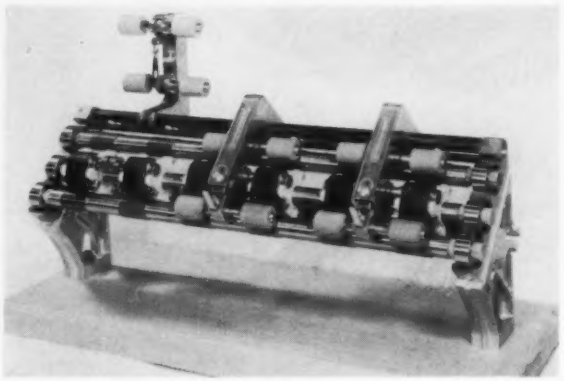
In November, 1960, Hercules purchased a fiber spinning plant at Covington, Va., from Industrial Rayon Corp. where it will produce 10 million pounds a year of Prolene polypropylene fiber.

Roberts Announces New Machines

Roberts Co. has developed and put into production a new design drafting system for spinning cotton and staple synthetic yarns. Designated as Roberts FC Drafting, the system features a cartridge weighting arrangement said to eliminate all weighting attachments to the roll beam, and thus disposing of the conventional lever screws, weight levers, weight blocks and dead weight. The double apron system, with PosiWate pendular arm suspension, handles coarse or fine yarns, and provides proper fiber control, fiber gripping and weight, without the limitations of other systems using short springs, weights or magnets, according to Roberts.

Roberts also announced that it will introduce a new sliver spin system as well as an advanced high speed roving frame. Robert E. Pomeranz, president, said that recent design improvements and technological developments have permitted Roberts to produce a sliver spin system "specifically tailored to the proficiency of American mill practices." He added that the high speed roving frame permits 50% more production than conventional roving frame designs at a realistically economic price.

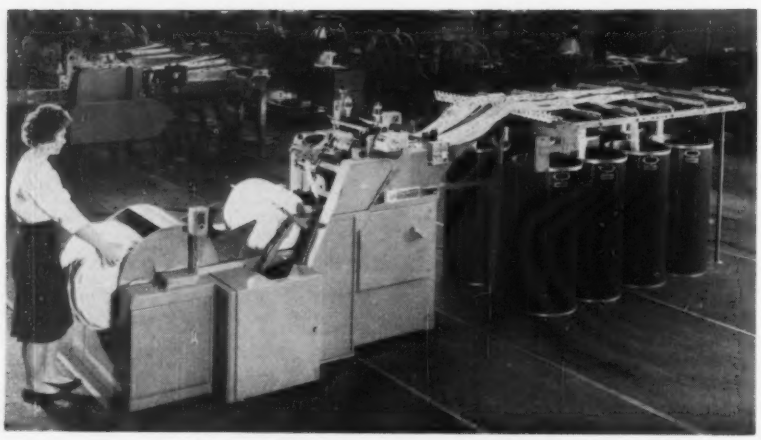
Pomeranz said that, in his opinion, there is room in the American textile industry for both improved roving frames and new systems for spinning from sliver. He revealed that Roberts' sliver spin system would use five pound cans for sliver supply, the cans to be located in the creel of a Roberts 39-inch wide Arrow Spinning Frame. Drafts of 100 to 300 will be possible, he stated, in the two zone, double apron drafting system. Spindle speeds up to 15,000 rpm are expected.



Roberts' new FC Drafting system showing cartridge weighting arrangement

Roberts' new roving frame for both cotton and worsted systems will produce a 14 x 7 package weighing up to six pounds at speeds up to 12,000 rpm. Pomeranz said that, by proceeding along dual avenues with both a sliver spin system and a roving to spinning process, Roberts intends to continue its policy of being responsive to the needs of the mills by providing the very latest in spinning technology.

The company also announced it has received a contract to supply 50,000 new Roberts Supreme ball bearing spindles to Joanna Cotton Mills Co., Joanna, S. C.



Warner & Swasey's new automatic ball doffer

Automatic Ball-Doffer Installed

Warner & Swasey Co. reports that its first production model of a new self-contained automatic ball-doffer has been delivered and installed on an M-3700 pin drafter intersecting draw frame of a New England top maker. Designed to wind, doff and resume winding a new ball in less than 12 seconds without operator assistance, the new device reportedly improves both operator and machine efficiency and reduces downtime. It can handle 18 by 24-inch balls weighing up to 50 pounds. *For further information write the editors.*

Extended Unemployment Benefits

A bulletin was recently sent to members of the Textile Distributors Institute advising them of changes in the law regarding unemployment insurance benefits in New York State. As a service to the textile industry, the Institute has made public the text of the bulletin which follows:

"As you may have read in the newspapers, the New York State Legislature recently passed, and the Governor signed, legislation providing for certain limited extension of unemployment insurance benefits. Following are some of the highpoints of this new law:

"The increased benefits do not go into effect immediately but only at such time as it is announced by the New York State Department of Labor that 1% of the covered employees in the state at one time have exhausted their regular unemployment insurance benefits during the most recent 13 week period.

"Once the point is reached, and the public announcement is made, an unemployed person who in any unexpired "benefit year" has already used up his regular 26 weeks of unemployment benefit rights and is still eligible for unemployment insurance will be entitled to draw up to an additional 13 weeks payment of unemployment benefits." (Editor's Note: Announcement formally extending the period of eligibility under the new law was made in April.)

"When and if the Industrial Commissioner announces that the new program actually is in effect, he will also give specific instructions on how an affected claimant can secure his additional benefits."

"This emergency legislation is limited to the period ending April 1, 1962. Whether or not the Legislature next winter will extend the emergency program undoubtedly will depend upon the economic circumstances at that time."

"Further details and information can be obtained from your Local Office of the New York State Department of Labor, Division of Employment. In New York City, this is located at 500 Eighth Avenue, New York 18, N. Y.—Telephone LO. 3-7660.

TDI Golf Tournament June 14-16

The Concord Hotel, Kiamesha Lake, N. Y., less than two hours' drive from New York City, will again be the locale of the annual Golf Tournament of the Textile Distributors Institute, June 14-16, according to an announcement by Samuel Schwartz, Cadillac Textiles, Inc., chairman of the Golf Tournament Committee. This year the Institute and its guests will have the exclusive use of the new wing cardroom and cocktail lounge of the Concord. Get together headquarters for the members and guests of TDI attending the tournament will be in the Concord's New Forum Area, according to Mr. Schwartz. He said that 40 to 50 rooms will be reserved for those who wish to arrive on June 13, if they advise the Institute ahead of time.

Reservations for the all-stag affair will close on June 1, according to Miss Hilda A. Wiedenfeld, Executive Director of the Institute. Reservations may be made by contacting Miss Wiedenfeld at the Institute's office, 469 Seventh Ave., New York 18, N. Y. LOngacre 3-2992.

Mr. Schwartz also revealed that preparations for the annual TDI musical show, a traditional high point of the Golf Tournament, to be presented on the evening of June 15, are going forward under the direction of William H. Radebaugh, the Du Pont Co., and Bruce Roberts, Eastman Chemical Products, Inc., and co-producer and co-directors. Others who are participating in the planning of the musical show are Louis Corrigan, J. P. Stevens & Co., Van Dionne, Reeves Brothers, Inc., Standish Holmes, American Enka Corp., Arthur Spiro, Waumbec Mills, and Budd Schlesinger, United International Corp.

Plans for the show call for presentation of some of the hit songs of former years brought up to date and sung by the persons who originally presented them in TDI shows of former years. New songs and skits will also be presented.

Serving on the TDI Golf Tournament Committee are Abe Kirschenbaum, Pedigree Fabrics; William La Gattuta, Wullschleger & Co.; George Greenspan, Cantor-Greenspan Co.; Irving Roaman, Reliable Fabrics, president of TDI, and Nat Leavy, Goldstein & Leavy, chairman of TDI's board.

Brittany Joins TDI

Brittany Fabrics, Inc., 35 West 33 St., New York 18, N. Y., has been elected to membership in the Textile Distributors Institute, according to a recent announcement by Irving Roaman, president. Joseph W. Cook, Jr., is president and Edgar I. Freidenberg, Jr., vice president of the firm which is a distributor of men's and boys' woven fabrics.

Dyers Vacation July 3 to 17

The vacation period for the dyers and printers in the middle Atlantic area, including New York and New Jersey, will be July 3 to July 17.

New Traffic Bureau Address

The new address of the National Textile Traffic Bureau is 366 Fifth Avenue, New York 1, telephone: PE 6-7592. John V. Hoey is traffic director of the bureau which is retained by the Textile Distributors Institute to provide freight rate service to members.

NEW FABRICS

NEW YARNS

New Stretch Cloth

United States Rubber Co. and Franklin Manufacturing Co. have developed a new stretch fabric for women's and men's sportswear. Franklin is the selling agent for the cloth which is 34% nylon, 33% acrylic and 33% viscose. Called "Contour Cloth," the new fabric has, in addition to "stretch," crease-resistance, machine washability, and wrinkle-resistance properties. The producers emphasize that the new fabric is a filling stretch cloth. It is offered in plain colors, 45-inch, at $2.35 and in yarn-dyed patterns at $2.55. It is also offered laminated to foam for which plain colors are $3.25 per yard.

Stretch Inner-Sock

Robert Hosiery Mills, Inc., is marketing its new Rondo stretch inner-sock, Sport-Sox. The socks are said to be fully absorbent, washable and fast-drying. Sport-Sox are made of 60% cotton terry and 40% Helanca stretch nylon. They fit all ladies hosiery sizes from 8 to 11. Designed to retail at 59 cents, their low-cut permits tanning to the shoe line. They are made in Seafoam White. *For further information write the editors.*

New Vycron Fibers

Beaunit Mills, Inc., producer of Vycron, has issued literature concerning two new Vycron yarn types available for fabric development. Type 1 Vycron is a high-strength yarn adaptable for sheer and open construction, while Type 2 Vycron is compatible with cotton. Type 1 is used in lightweight voiles and batistes, providing strength and wash-and-wear characteristics. Type 2 is already appearing in broadcloth, as well as in special blends with rayon. Vycron is spun by Beaunit's Fibers Division from Vitel, a resin produced by The Goodyear Tire & Rubber Co. *For further information write the editors.*

Two-in-One Shirt

Stedman Manufacturing Co. has introduced a new style "T" shirt designed for dual use. Called the Matador "2 in 1," it is a contour-fitted shirt that can be worn as either an inner or outer garment. The shirt, with taped collar and arm bands, is made of a waffle-like fabric that helps the body "breathe." *For further information write the editors.*

Caprolan Upholstery Fabrics

Burlington House reports volume sales of its Jacquard upholstery fabrics of 100% Caprolan nylon, introduced in January. The new fabrics are Burlington's first offerings in all-nylon. Caprolan, Allied Chemical's nylon fiber, is being used exclusively because of its dyeing quality and resistance to abrasion. Burlington also pointed out that the all-Caprolan fabrics need no additional treatment for color fastness or any of the silicone finishes to prevent soil. Jacquard looms are used because the converter believes Caprolan lends itself best to heavier textures. *For further information write the editors.*

Creslan Swimwear

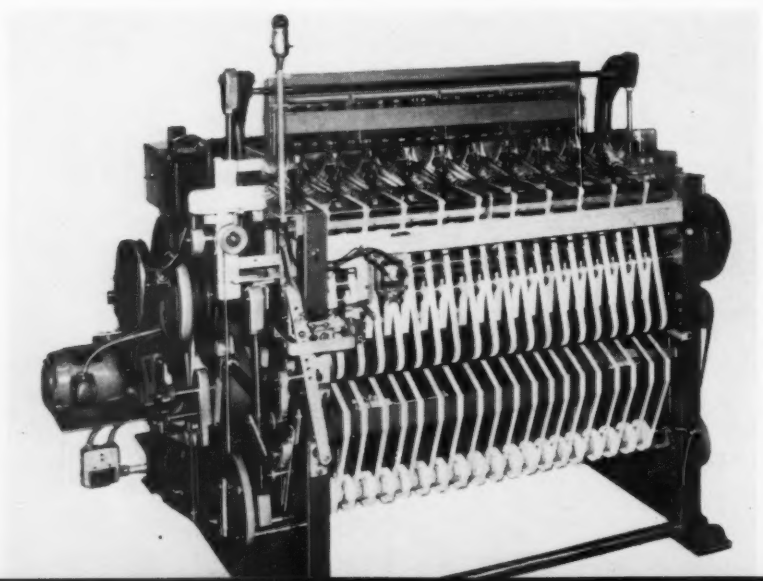
Jantzen has introduced Creslan acrylic fiber into its 1961 summer swimwear lines for young girls in two styles featuring horizontal stripes. The elasticized boucle knit fabric is a blend of Creslan, cotton, nylon and rubber, fashioned in classic maillots styled proportionately in both the girls and pre-teen lines. *For further information write the editors.*

New Synthetic Felt

Fiberloc, a new fabric mechanically bonded, is being introduced by The Felters Co. Fiberloc can be produced with any manmade fiber and is now offered in Dacron, Orlon, nylon, viscose, acetate, arnel, polypropylene, or in various combinations in widths up to 108 inches, and with thicknesses up to 1 inch. The bonding technique is said to entirely eliminate the normal felting process. Fiberloc can be die cut to precision shapes without fraying or raveling, the company reports. *For further information write the editors.*

Hospital Sheeting

Aldan Rubber Co. has developed a new hospital sheeting of neoprene-coated Du Pont Dacron polyester fabric, which it has added to its line of standard and conductive hospital sheetings. Extensive testing of the new sheeting is said to have proven it to be highly resistant to chemical agents (oils, acids, alkalies and body excretions) as well as to fire and abrasion. While extremely lightweight, it has high hydrostatic resistance as well as breaking strength, tear resistance and other desirable physical properties. *For further information write the editors.*



Improved Narrow Fabric Loom

Bowser and Associates have developed a compact loom which measures only 47-inches in overall height. The loom, which applies the latest advances in machine and electronic techniques to narrow fabric manufacture, has no harness and cams. If either the filling or warp breaks or the quill runs out, the machine automatically stops on the pick and a red light signals the operator. With a maximum of 20 shuttles per machine, less production is halted when the machine is stopped for breaks or reloading. *For further information write the editors.*

Floyd Jefferson, Sr.,

(Continued from Page 21)

chairman of the Alumni Fund Committee and Bequest Committee for Yale, 1902, and one of three members of the class reunion committee.

After his graduation, Jefferson made a deliberate choice of the business world for his career. In the fall of 1902, he went to work for Howe Manufacturing Co., a brass and iron foundry in Louisville in which his father had a substantial interest. In 1907, the company was liquidated. Casting around for a new connection, he found to his liking a suggestion of his father-in-law, Henry G. Woodruff, then a prominent textile merchant in New York City, that he try his hand at selling cloth.

To prepare himself as thoroughly as possible for his opening career in textiles, Jefferson decided that he should make himself familiar with basic fabric manufacturing methods. With the help of his father-in-law and a classmate at Yale, Ives Goddard of Providence, R. I., Jefferson went to work in the Social Mill of the Manville Co. in Woonsocket, putting on overalls and working as a mill hand in the manufacturing departments for a year.

Studied Job Offers

Equipped then by this working experience with a knowledge of how yarns and fabrics are made, he went to New York to look for a job as a salesman. He did not have to look long. It was a characteristic turn of affairs, foreshadowing later events in his career, that more than one firm was interested in securing his services. From job offers by his father-in-law, William D'Olier Co. of Philadelphia, Wellington Sears and A. D. Juilliard & Co., Jefferson, weighing the relative attractions of all four as he could see them, chose the Juilliard position.

Thus was begun a career in textile marketing that was to be distinguished by prodigies of untiring effort, long hours of work, and an intuitive skill in selling that has made Floyd Jefferson, in his lifetime, a legend of textile success. An example of the kind of acumen in selling that helped Jefferson in his rise from the undistinguished level of a plain bread-and-butter salesman showing his wares is found in an incident of his first year with Juilliard. Selling Juilliard's sheets in upstate New York, Jefferson soon found that one line, called the Challenge, did not seem to please his customers.

In Syracuse, one day, he opened his sample case and took out several sample sheets, showing a customer a strong selling line and putting aside the Challenge sheet. Perversely, as customers will, his prospect became curious about the unpopular item lying to one side. Jefferson turned aside his inquiry by remarking quite casually that the Challenge sheet was completely sold up, and that Juilliard was taking no further orders. Seeing that the customer's interest in the Challenge sheet was still strong, he added, as if making an unwise concession, that he just might be able to squeeze through an order for 25 cases as a special favor which no doubt would cause him difficulties with the home office. The customer snapped up the offer. Jefferson repeated this strategy on subsequent calls until the faltering Challenge line was really sold out and the home office wired him to take no more orders.

Selling skill of this order made a great impression on the head men at Juilliard. After a year, they appointed Jefferson sales agent for the New York Mills Bleachery of Utica, a finishing plant owned by the company. In his new position, Jefferson lost no time in plunging ahead in an energetic job of selling the services of the bleachery. Moving on in the next few years to a series of selling jobs, each one making him better known in Worth Street as a man who had the uncanny knack of selling fabric, Jefferson in 1917, headed a department at Tatum, Pinkham and Greey which he soon built to be the largest department in the house. The position carried no salary, Jefferson's reward for his efforts being in the much more satisfactory form of one-fourth the gross commission on sales made through his department.

Friends in the South

Frequent trips throughout the textile South during those years made Jefferson well known among the important mill owners of the Piedmont. Among the Southern businessmen who learned to like and respect Jefferson in those years were J. B. Duke, the famous leader of the tobacco industry and founder of the Duke power interests, James C. Self, the builder of Greenwood Mills, Elliott Springs, Ellison McKissick, B. E. Geer, Robert Mebane and George A. Harris of Expedition Cotton Mills.

In 1917, a new and larger phase of Floyd Jefferson's career opened. Impressed by his record of success as a textile merchant, Duke, Self, Geer and Mebane moved to form a new sales agency for him to head. But just as the new corporation was about to be set up, the late R. E. Reeves of Hunter Manufacturing & Commission Co., succeeded in persuading Jefferson and his backers that it would be more advantageous for all concerned if Jefferson joined Hunter as a vice president and brought with him the considerable business he commanded including the selling agencies for Judson, Greenwood and Republic Mills. All parties concerned acceded to Reeves' plan.

Larger Responsibilities

Under the new arrangement, Hunter became the largest textile selling agency in the world, its volume climbing to $100 million, an unprecedented figure in those days. Floyd Jefferson shared in a percentage of the commissions on these sales, bringing him a large income. With his new and larger responsibilities, he worked harder than ever. He served as chairman of the Hunter executive and finance committees, and his duties in connection with finding buyers for the enormous yardages of cloth turned out by the many mills Hunter represented were indeed heavy. How well he discharged these responsibilities became one of the great success stories of the New York textile market.

In 1927, after the death of R. E. Reeves, Jefferson saw that the time had come for him to leave Hunter and form a new connection. Thus he was receptive when he was approached by Oliver Iselin with a suggestion that he join the fine old firm of William Iselin Co. in the formation of a new sales agency. At a meeting to discuss this possibility attended by Percy Johnston, Lincoln Cromwell and Arthur Iselin, Jefferson proposed a corporation with a capital of $1 million, one half to be subscribed by Jefferson and one half by William Iselin & Co. After some discussion, Jeffer-

(Continued on Page 44)

son accepted a counter proposal for a partnership between William Iselin & Co. and himself, with Jefferson to have 50% interest.

The new firm of Iselin-Jefferson Co., had hardly got under way when it ran into the great depression of 1929. By the mid thirties, however, the bad years were behind it, and the profits increased in a satisfactory manner. In 1946, after operating for 19 years as a partnership, Iselin-Jefferson became a corporation, exactly along the lines that Jefferson had suggested in the 1927 founding conference. The new corporation had $1 million in capital of which the William Iselin partnership subscribed one half and Floyd Jefferson the other.

Merger with Dan River

In 1946, Iselin-Jefferson acquired the majority interest in Woodside Mills, and in 1951, the Iselin-Jefferson Financial Co. was formed, with Jarvis Cromwell as president, a corporation wholly owned by Iselin-Jefferson Co., Inc. In 1956, all the stockholders of Iselin-Jefferson Inc. exchanged their shares for stock in Dan River Mills. Iselin-Jefferson, now a wholly owned subsidiary of Dan River, continued with its former executive, administrative and sales staffs. As a result of the merger, Floyd Jefferson, Sr., became the largest single stockholder in Dan River Mills. Dan River, for which Jefferson serves as chairman of its executive committee, stands high among the giants of today's textile manufacturing world. Its sales last year were $163 million and its range of products cover the whole broad spectrum of cloth manufacturing.

When we count up from the date of his birth, arithmetic tells us that the years Floyd Jefferson has lived are 82. But arithmetic in this case does not tell us the truth. The truth is, that measured by the more important human elements of cheerfulness, vitality and unabated keenness in living, Floyd Jefferson is a young man. Although he has done remarkably well in the business world, Jefferson has never been only a man of business. All his life he has been interested in matters he considers more important than making money.

He is past president of the New York Board of Trade, the New York Southern Society, The Kentuckians, and he is a Kentucky Colonel. He has headed numerous fund raising campaigns for worthwhile causes including the Southampton Hospital of which he is a past president. Jefferson is vice-chairman of the American Arbitration Association and for ten consecutive years he was toastmaster of the annual "Business Speaks" dinner of the New York Board of Trade. Most of his presidencies have evolved into chairmanships of which he still holds fourteen.

Over the many years innumerable good causes have benefited from Jefferson's willingness to give freely his organizing ability, his persuasiveness and his unstinted energy. Among the lifelong beneficiaries of his activities in the public interest have been Yale University. For many years, he has been deeply interested in the Metropolitan Opera in New York City where he is a box holder and a director. He is also vice president of the Metropolitan Opera Association and serves in addition as chairman of its endowment fund committee. His interest in the opera has led him to work for the new Lincoln Center for the Performing Arts in New York City which will provide the new home of the Metropolitan Opera as well as music schools and theaters for dramatic and dance performances.

Looking back on his long life in textile marketing and evaluating his own success with the detachment his present relaxed and comfortable eminence permits him, Floyd Jefferson modestly gives the major credit to the element of good fortune, but those who know him best attribute his success to personality, friendliness, knowledge of his subject, fairness in his business dealings and hard work.

Ability to Inspire Confidence

With these traits, and no doubt as part of them, has been the ability to inspire confidence. Important people, in getting to know Floyd Jefferson, felt with certainty that here was a man of outstanding ability, a man whom they could rely on to help them in their own search for success and riches. And Jefferson, as his remarkable career in textiles shows, possessed to an outstanding degree the ability to make and hold friends. And back of all these elements of character, serving as a solid bedrock on which they have stood and exerted their powerful influence on his behalf, has been the indispensable ability, when it has been necessary, to work hard and long to get through the back-breaking, unpleasant, time-consuming spade work that all great enterprises require.

And as for the future? Jefferson sees the future as the past, as a time to accomplish useful work, to make his contribution to worthy causes, and also of equal importance, to enjoy life. As to this final and pleasant item on his agenda, Jefferson, in speaking in a light vein at the dinner last year in his honor, offered his friends the following prospectus worth repeating here:

"When I am old, I'll be sedate
And always go to bed at eight,
And always shun a date that's late.
But while I'm young, I'll have some fun
At least until I'm ninety-one
Or possibly till ninety-eight."

Bondyne Gabardine

Rutgers Fabrics Corp. has introduced a complete, new line of Bondyne Dynel blend gabardines for Fall, 1961. Produced in 60-inch widths, the fabrics contain rayon, acetate and Dynel modacrylic fiber. Styled for the popular-priced men's and boys' slacks trade, the fabrics are priced at $1.30 to $1.35 a yard and weigh 13 to 13½-ounces. Utilization of filling yarns containing at least 30% Dynel, Union Carbide Corp.'s modacrylic fiber, are said to impart a high degree of press retention to the cloths. *For further information write the editors.*

Creslan-Dynel Rugs

The pile fabrics division of Collins & Aikman has introduced a high-pile scatter rug that can be washed in warm water without losing its qualities of resilience, soft texture and bright color. Called Cloud No. 9, the new rug is made from a blend of American Cyanamid's Creslan acrylic and Union Carbide's Dynel modacrylic fibers in a 60-40 proportion. A Collins & Aikman spokesman reports that the erect pile never mats and the acrylic fibers do not absorb water, while a heavy duck on the back gives the rug added strength and wearability.

PAPERS OF THE
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TUFTED FABRICS

The explosive growth of this new industry as told by a leading maker of tufting machines

By M. M. Beasley

THE TUFTING INDUSTRY in the United States had its origins as long ago as the turn of the century in the region around Dalton, Georgia. For many years it was a handicraft carried on by men and women who made bedspreads which gradually found their way into retail stores throughout the country. In time, however, rising labor costs to which Federal minimum wage and hour laws contributed substantially, made it imperative to develop machines to replace tufting by hand.

It was several years before a really practical machine was built and it was known as the "Perfect Tufter." Along about this time Cobble Brothers Machinery Co. was founded, and began almost immediately to build tufting machines by adding a tufting unit to Singer Sewing Machine heads. Soon they had designed and were casting their own machine frames. Cobble tufting machines began to be recognized and to build a reputation.

In 1940 Joseph Cobble, then president of our company, conceived the idea of a machine which would tuft the width of a bedspread all at one time, and pass the material through the machine in a continuous operation. This would shorten the labor even more than the single needle and multi-needle machines which were built up until that time. The first machine was built on a fabricated frame which was made out of angle iron and channels, and the spacing of the needles in this machine was 1⅛ inches. One hundred needles were all that the machine had. But it was successful from the start, and when they started it up, it ran, and it continued to run. Thus was born the yardage tufting machine!

We built five of these machines before World War II came along and all our facilities were devoted exclusively to the production of precision gun parts and other items for defense. It wasn't until 1946, that we returned to the original business of our company. In this year we designed and cast the first cast yardage machine. This was known as the "Big Machine" and those machines are to this day referred to as the BM machine and the part numbers have the BM prefix. This is a little amusing now since this machine weighed only about 3,500 pounds, while our largest machine today weighs about 22,000 pounds.

This machine continued for several years until 1949 when we designed the present enclosed type machines that we are now using. Since that time many improvements and changes have been made as the machines were rapidly developed to the perfection that they have now attained. In these two or three years following the end of World War II the beginning of the present large scale tufting industry as we know it today had its start. People began to go into the tufting business in a large scale way. Some of our



M. M. Beasley

Beasley is vice president of Singer-Cobble, Inc., maker of tufting machines. He joined Cobble Brothers Machinery Co. in 1951, after earlier experience as a machinist and also in the plant engineering department of Combustion Engineering Co. In 1955, he was appointed vice president of Cobble and continued as vice president of Singer-Cobble when Singer Mfg. Co., purchased Cobble in 1960. Beasley studied engineering at the University of Chattanooga.

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customers bought machines, two and three at a time, and we have sold as many as six identical machines to one customer at a time.

It was also about this time that people began to experiment with the manufacture of tufted rugs. Bathmats came first since they were more closely related to the tufting of bedspreads. Then someone discovered that by putting a latex coating on the back, he could make a throw rug that would not skid, and one that would retain its tufts. Thereafter in a rapid process of evolution, tufted carpet came into being. These earlier tufted carpets were all cotton. Later on synthetics of various types were tried with viscose carpet taking over large portions of the share that had belonged to cotton exclusively.

Nobody felt that the tufting industry would last, except a few who had faith in it. Even the people who were engaged in it seemed to think that every year would be the last big year for tufting and after that it would dwindle because the demand would be supplied. And we especially as machinery builders were told it would soon play out for us and we would no longer have a business. This has never been our idea. Even today we look forward to bigger and better things for the tufted industry.

Reluctant Carpet Makers

The old line carpet manufacturers wanted no part of tufting. They had hundreds of thousands of dollars worth of looms and equipment for producing loom-woven carpets. They could see no future in tufting. Of course they had to find out what it was about because tufted carpets were appearing in stores all over the country. Eventually the carpet manufacturers lost so much business to the relatively inexpensive tufted carpets that they were forced to buy tufting machines of their own to make tufted products to compete with carpets that were coming out of Dalton and surrounding areas.

We feel that this development was a fortunate thing for the tufting industry as a whole, because once the old line carpet mills got into it and were sold on tufting's possibilities they contributed a lot to the industry through their knowledge of carpet merchandising techniques, quality control and styling.

They have reversed the trend that had started at that time of continually cheapening the tufted article in order to meet competition and to sell at a lower price. They have put tufted carpets into a class by themselves. Tufted carpets are no longer thought of, even by the uneducated, as being inferior carpets, but simply as a different kind of carpet. The tufted carpet has its own place and it has numerous advantages that are inherently its own which cannot be taken over by carpet made on any other manufacturing process.

The advantage which is first thought of, and which is unquestionably of great importance is price. One of the larger carpet manufacturers—one who makes both tufted and woven goods—told me recently that they figured there was a price differential of about 25% or more between comparable quality woven and tufted carpet. To state this a little more clearly, he figured that tufted carpet of the same weight, type and quality could be produced on tufting machines for 25% less than it could be loom woven.

There are several factors involved to bring about this situation. One is the actual labor savings realized from the approximately 1000% increase in production. Another important consideration is the higher productivity of the equipment, which creates a much better return on the capital invested in machinery. Also, a tufting operation requires a much lower outlay of cash for equipment than a weaving operation so that the manufacturer is actually able to produce 10 to 20 times as much goods on a machine which costs perhaps one-half as much as a loom, to use an extreme example. Without question, the general overall investment would be less.

The 25% differential which was mentioned would hold fairly constant over the whole medium price range where the great majority of goods is sold, and would tend to equalize more nearly in the extreme high and low ends of the price range. Accurate figures on this are difficult to obtain.

Success Brings Problems

As machinery builders, we have been confronted with many problems as the tufting industry experienced the pains of rapid growth. Not only have we been able to solve them as they have arisen but, and we say this modestly, every major innovation in the tufting machinery field since we entered it, has originated at our works! It was Cobble who originated the yardage machine, and who first used frictionless bearings in the machine. We also introduced the cluster type creel, the tufting machine yarn feed, the waveline attachment, self-setting hooks, the roller type pattern attachment, the universal and scroll attachments, the controlled needle principle, and many other refinements and improvements.

These improvements and innovations in tufting machines have led the way to broad tufted fabrics with interesting surface textures, and have contributed greatly to the growth of the tufted carpet industry. The size and importance of this industry is demonstrated by figures recently made available by the Department of Commerce. These figures reveal how the production of tufted floor coverings has increased year by year as follows:

Year	Square Yards Produced	Dollar Volume at Mill Level
1939	1,210,000	$ 1,838,000
1940	1,867,000	2,933,000
1941	2,059,000	3,395,000
1946	6,500,000	24,138,000
1947	13,951,000	31,790,000
1948	14,736,000	33,877,000
1949	17,000,000	42,506,000
1950	19,000,000	50,503,000
1951	21,146,000	60,413,000
1952	29,567,000	84,047,000
1953	39,096,000	106,396,000
1954	54,411,000	147,425,000
1955	77,822,000	222,824,000
1956	83,177,000	241,176,000
1957	99,651,000	296,018,000
1958	113,640,000	327,387,000
1959	132,816,000	383,652,000
First half of 1960	74,289,000	220,381,000
Up 11½% over 1st half 1959		
Up 8½% over last half 1959		

This growth interpreted with relation to the overall soft floor covering industry indicates that in 1952, the tufters captured a bare 14% of the total soft floor covering market, but by the end of 1959 this had been increased to 59.5%. Almost 133 million square yards of carpet is a staggering figure, but it doesn't mean too much to us until we consider the fact that if this were all converted into a single 15 foot carpet, it would reach from here to London, England, then back to Chicago, and from there to Wellington, New Zealand, by way of San Francisco and Honolulu, and still have several hundred miles to spare!

Some other figures show these interesting facts concerning percentages of various types of carpet in the United States:

In 1939 total broadloom (6 feet or over) carpet production was about 52 million square yards, all of which was woven. This had risen to 73 million square yards in 1952, of which 36% was axminster, 20% wilton, 29% velvet and 14% was tufted. In 1959, total production was 154 million square yards, of which 10% was axminster, 11% wilton and 19% velvet, but tufted had risen to 60%.

	Axminster	Wilton	Velvet*	Tufted	Total	Total—Square Yards Produced
1952	36.4	19.8	29.5	14.3	100%	73,097,000
1953	32.8	18.9	27.9	20.4	100	79,630,000
1954	26.3	16.5	24.6	32.6	100	85,477,000
1955	24.5	15.0	24.5	36.0	100	110,280,000
1956	20.2	14.3	23.4	42.1	100	118,105,000
1957	16.4	12.3	21.0	50.3	100	124,579,000
1958	12.6	11.1	18.2	58.1	100	130,933,000
1959	10.2	11.4	18.9	59.5	100	154,535,000

This shows that there are some variations in the quantities of different types of woven goods, with the biggest drop being in axminster carpet. But the total yardage of woven goods produced in 1959 is almost the same as that produced 1956 even though the tufted process has gained almost 60% of the market. While loom woven carpet has not lost much ground production-wise, it has not made the normal gains it should have made in view of rising population, increased new home building, and rising standards of living. Almost all the increase in carpet consumption is due to the introduction of tufting, mostly at the expense of axminster. To compare the year 1959 with 1952, the production of the various carpet types is as follows:

Total broadloom carpet production	up	111.4%
Wilton	up	27.5%
Velvet	up	43.2%
Axminster	down	52.1%
Tufted	up	516.6%

Foreign manufacturers with American associates, those who came over here to buy textile machinery, those who were attending our technical schools, those who were just here visiting, all were impressed exceedingly by what they saw in the South in the tufting industry. They went back home enthused with what could be accomplished in their own country.

Several years ago we were kept busy every day just answering inquiries from every industrialized country in the world. We would receive inquiries with as many as 20 questions, all of which had to be answered in detail, trying to explain what a tufting machine was, how it worked, what it could do. We answered questions, we made quotations, we made plant layouts, and we found that we were answering the same questions over and over, sometimes to the same people, and eventually we decided it would be perhaps a better part of valor if we just sat down and wrote a booklet that would answer all these questions and save a lot of clerical work and a lot of wear and tear on the typewriter and dictaphone.



ROLLING OUT CARPETS—This big Cobble Brothers Tufting Machine, shown in operation in a southern tufting mill, is typical of the high production machines that have enabled tufted carpets to surpass woven goods in volume.

So we did—We wrote such a booklet, which we have distributed under the title of "Handbook of General Information." This answered the questions, but left us to overcome the objections raised by these people which had been overcome here years before, concerning their great fear of overproduction. These fears are understandable to us. Anybody who has watched a tufting machine turn out several hundred yards of fabric in the course of a day and has stopped to reflect a little bit on how many such machines there must be in the country, must begin to wonder where it all goes and just how long it will take to saturate the market. I think now that this has been pretty well demonstrated that this point will not be reached, because tufting has created whole new markets. But it has been interesting indeed to note that this same psychology has come up in every country in which our machines have been sold, and we have had to answer this argument over and over again.

Exclusive Licenses Asked

One of the first propositions that is made to us runs something like this: They say: "Our market is just too small to support more than one or two machines like yours, and therefore you will have to give us an exclusive license for our protection. If you will do this, if you will sell it to us exclusively, we'll buy your equipment."

It can readily be understood that for a machinery manufacturer, a course such as this would be suicidal. So we find that we must go through this same argument again and again in each country in which our machines are sold. Five years ago we were answering this question and similar questions to people from England. England is a highly industrialized country. It is very strong in textiles, and a lot of carpets are made there, and England was perhaps the first country to be seriously interested in going into the tufting field. Since the English are conservative, we had a difficult job in persuading them, and they had a difficult job in persuading their principals and superiors back home that what we have said is true.

That was about five years ago. Today, there are approximately 150 broadloom tufting machines of nine foot width and over in operation in England and on the continent. Approximately 70% of that number are in the British Isles. Now that was accomplished in five years. The same results are being carried out in other countries, each following a little behind the other, depending upon when they started into the tufting business. Cobble and Super Tufter machines are now in operation in 17 foreign countries which include Canada, Mexico, England, Ireland, Scotland, Denmark, Belgium, Holland, Sweden, Spain, France, Germany, Italy, South Africa, Japan, Australia, New Zealand. You might also add Russia and Poland to that list because both of these countries have equipment coming in to set up complete vertical plants to make tufted carpet all the way from raw fiber to the finished product.

We find that in most cases that these countries are from three to five years behind us in their thinking and also in the progress which they have made in the tufting field. It is a matter of becoming sold on the idea and then in turn selling the consumers on the virtues and qualities of tufted products.

So we find that history repeats itself not in the thinking of the people, but also in the styling of the tufted products. In this case they are usually content to follow the lead of America. I think that possibly this will always be true because the industry was born here; there are a lot of people here engaged in it; we have a very large and very competitive market that forces us to continually bring out new fabrics and new ideas to supply the demand and to create new interest and new sales.

In other countries where this demand has not become so great, they are not faced with the necessity of taking initiative but only have to look at America and see what is selling best here and then producing the same thing at home. This probably will not always be true in the same proportion that it is today because machines that are being sold today into the export countries are not the machines that we were selling here five years ago, but they are the most modern and the most up-to-date machines, in the latest gauges, with the latest pattern attachments, and the latest styling.

In all fairness, I must say that I have seen some unusual and beautiful fabrics produced on machines in some of these countries. These fabrics have done things with colors and with waveline attachments and seven roll pattern attachments that I personally would never have visualized. It is a case of designing to suit the taste of that particular country. The fabrics are beautiful but they are totally different from what we have been accustomed to looking at and therefore they probably wouldn't set the woods afire in this country.

How Many Machines?

No accurate figures are available on the total number of broadloom tufting machines that have been built and put into operation. There have been a number of machines built over the years by the tufting manufacturers themselves in their own plants, and there have also been a number of competitive machines produced in America and in England. According to our best estimates, the total number of broadloom tufting machines now in operation would be well over 1,400. Approximately 85% of these have been built by the Singer-Cobble group.

With regard to yarns and fibers, the consumption of cotton and viscose yarn remains high, but increasing amounts of wool and other types of fibers are being used. In 1960, wool for the first time became the number one fiber in broadloom tufted carpet. In the first six months of 1960 there has been an increase in the use of nylon and other synthetic fibers. This has no doubt been brought about by the sharp increase in the use of bulk filament yarns, which have become very popular, and seem to be increasing in popularity.

The latest development in tufting which is beginning to reach large scale proportions is the use of new "napped" pile fabrics. These fabrics are truly amazing. Different yarns and finishing processes fit these fabrics for use as linings for coats and jackets, or for outerwear and imitation fur. In the future, we feel confident that we will see these fabrics being used more and more in these fields, and also for blankets and other products using a similar fabric.

We feel sure also, that the future will find tufted products used extensively for upholstery fabrics. Some work has been done in this direction, but it has been slow catching on. We also have samples here of upholstery fabrics which have been developed recently, which will show you some of the possibilities of making these fabrics on our type of equipment.

Other things which the future will bring in this field are increased use of colors. We have just installed a bedspread machine which is capable of

producing unlimited designs in two colors. This is still too new to evaluate properly. However the product from this machine is so attractive, that we do not see how it can fail to increase the use of tufted bedspreads. We expect also to see the increased use of colors in tufted carpet through the use of this type of machine, the printing process, and other means.

Tufting machines themselves will also become faster and more efficient, and will have new features designed for operator convenience, and decreased maintenance, higher speed, and other refinements. We still feel that we are only beginning to understand the full potential of the yardage tufting machine, and that there will be a place for it in any field in which pile fabric can be used. We believe that the future has a lot in store, and look toward the future with confidence and optimism.

New Foam Plant in Dalton

Pilot operations at the recently opened Curon of Georgia, a division of Reeves Bros., Inc., in Dalton, Ga., are reported by the company with the 12,000-square-foot processing plant now filling orders on hand. The new plant will supply tufted fabric manufacturers in the Dalton area with material for lamination and urethane foam backing applications for their rugs. Curon also is being used for garment fabrics as well as for many other special applications such as table pads.

Qualities of Curon's urethane backing listed as important to tufted textile mills are its non-skid, non-allergic, non-toxic characteristics; its imperviousness to many washings after which it retains resilience and shape, and its snag proof surface which takes stitching and sewing.

Reeves Bros. announced that Sunbury Textiles Mills Inc., Nylco Products Inc., and Ames Textile Corp., have been licensed to carry out Reeve's patented heat laminating process and to use the trademark "Curonized" when the lamination has been made with Curon foam.

Fabric Styling in Europe

(Continued from Page 38)

ican fabrics, Levin believes. "If we want more than the summer market for synthetic fibers, however, we must let our designers design, not just dress up last year's fabrics in a new color."

"American mills must learn to treat synthetic fibers as they do wool and silk—not as substitutes or as a means of cutting costs. Synthetics can be the basis of fabrics as beautiful and as treasured as the silks and wools in museums and historical fashion collections throughout Europe.

"To accomplish this, though, we need a whole new approach to the styling of fabrics made with synthetic fibers," Levin continued. "Let's take the emphasis off price, and off wash-and-wear. Let's stress the quality of fabrics, their fashion appeal, their beauty of texture and color, and their imagination."

In general observations on his recent European tour, Levin noted that "Italians are still masters of boutique, exercising wonderful imagination in color and design approaches. But the Italian haute couture has a tendency to cut clothes with a heavy hand." In Paris, the opposite is true. As the capital of haute couture, Paris is the fountainhead of fashion design, with Switzerland providing the inspiration of magnificent fabrics. Spain, while seemingly operating in a vacuum, is the home of many clever and talented new designers who are making names for themselves."

Japanese Quota Views

Japan wants to increase its voluntary export quota of cotton goods to the United States. Takeshi Morimoto, chairman of the Association on Japanese Textile Imports, recently pointed out in New York that only 6.8% of the surplus cotton Japan bought from the U.S. during the cotton crop year ending July 30, 1960, returned to the U.S. in textile form.

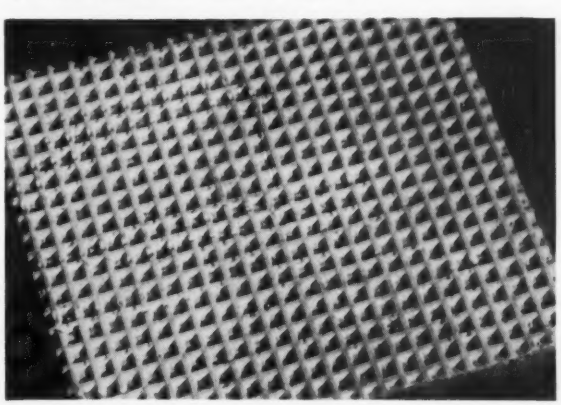
On the other hand, he noted, Japan purchased from the U.S. 1,755,000 bales of cotton from August 1, 1959 to July 31, 1960, or roughly 25% of the U.S. cotton exports in that period. Of that total only about 120,000 bales of cotton in textile form was shipped by Japan to the U.S. last year.

Soviet Fiber Research

Russian basic textile research is on a par with that in the United States and other Western nations, according to Edmund M. Buras, Jr., of Harris Research Laboratories. Speaking on "Soviet Artificial and Synthetic Fibers" at a meeting of the Washington Chapter of the American Association of Textile Chemists and Colorists, Buras said more work on new polymers was being published in Russia than in the U.S. This does not mean more research is actually going on, he said. But some of the work on the new polymers, he added, includes those based on metal-organic principle changes, acrylate polyesters and materials made by polymerization at high temperatures.

New Carpet Backing

British Tufting Machinery of Blackburn England, has introduced a new foam backing for carpets. Although mainly intended for tufted carpets, the new "waffle" backing can be applied equally well to traditional forms of carpet. Waffle backing is reported by the company to be a new and economical method of backing carpets with a layer of resilient latex foam. Although the machine for applying this new form of foam to carpeting is only shown now in a 27-inch model, it is intended to produce machines up to and even wider than 15 feet.



Nylon, Dacron Prices Cut

The Du Pont Co. last month reduced prices of Dacron polyester staple and tow by seven to 17 cents a pound, and nylon staple and tow prices by four to 15 cents a pound. Dacron fiberfill, used as a filling material in pillows, comforters, furniture and sleeping bags, was reduced six cents a pound. The prices of Dacron filament yarns and nylon filament yarns remain unchanged. The company also stated there would be no change in the prices of Orlon acrylic fiber.

The company said reductions of prices of Dacron staple and tow were made to broaden markets for these products which are now being produced in quantity at Kinston, N. C., and at the new plant at Old Hickory, Tenn. The price action on nylon staple and tow was taken to put these products in a more favorable economic position relative to competing fibers.

The lighter deniers of Dacron are used in blends with cotton and rayon while the heavier deniers are used primarily in blends with wool. Heavier denier nylon staple and tow items are used principally in carpets. The lighter nylon deniers are used mainly in low percentages in blends with cotton, wool, and rayon to add strength and durability.

The new prices are:

Dacron staple and tow

Deniers & Types		Old Price per lb.	New Price per lb.
1.5	54 & 35	$1.26	$1.14
1.5	64	1.41	1.24
2.25 & 3	64	1.41	1.24
3	54 & 61	1.36	1.24
4.5 & 6	54 & 61	1.31	1.24
6	64	1.36	1.24
Colorsealed black		1.61	1.44
Fiberfill		1.30	1.24

Nylon (major items)

Deniers & Types		Old Price per lb.	New Price per lb.
1.5	200	$1.33	$1.24
2.3	420	1.28	1.24
3.0	200	1.28	1.24
6.0	100	1.28	1.20
15.0	100	1.08	.95
18.0	501	1.15	1.00

Soil-Resistant Carpet Fiber

Union Carbide Corp. has been issued a patent on pile fabrics in which the fiber intrinsically hides soil. According to the company's textile fibers department, this will result in widespread use of its new Dynel carpet fiber in broadloom carpeting. Union Carbide applied for the patent only after several years of testing many types of carpet fibers, including variations of modacrylic fibers. Seventeen claims relating to compositions of synthetic resin fibers, their orientation, surface characteristics, opacity and luster were allowed in the patent.

As set forth in the patent, the invention is particularly "directed to a pile fabric having a pile structure of a substantially unoriented, nodular-surfaced polymeric fiber as a novel article of manufacture." Other objects of the patent are to provide pile fabrics with increased soil-hiding power and apparent soiling resistance, as well as "having good wearing qualities without fuzzing, pilling, sprouting and crushing."

In simulated traffic and wear condition tests described in two examples in the patent, the company said carpeting made of the new nodular-surfaced fiber was compared with equivalent carpet weaves of other fibers. In results tabulated, Union Carbide said, the Dynel carpet rated measurably less in apparent soiling.

All Dynel modacrylic fiber for carpets is being produced as a nodular-surfaced fiber in accordance with the patent. Another form of Dynel fiber also is available in combination with acrylics in knitted high pile scatter rugs.

New Finishing Agents

Two new durable water and oil repellent finishes—Hy-Ad and Hy-Ad S, have been developed by the Silicone Research Laboratory of Arkansas Chemical Co. Both products are now being used as stabilizers and extenders for oil repellent fluorochemicals in both water and solvent systems. Hy-Ad is said to allow for greater compatability with other desirable adjuvants in the presence of oil repellent finishes, and prevent pad roll build-up.

Hy-Ad used with FC-208 (water system) and Hy-Ad S used with FC-203 (solvent system) in most cases are said to improve oil and water repellency, and also increase durability to laundering and dry cleaning. Other durable finishes can be produced by using either product in conjunction with Arkansas Co.'s durable silicone water repellents, the Hydro-Prufs.

Nat C. Shane, Arkansas vice president, reports that in all cases Hy-Ad produces a soft, full hand with good lubricity for sewing on high speed machines. Its versatility is demonstrated, he stated, by the fact that it is advantageous even in the finishing of glass fiber fabrics. It also produces hydrophobic properties on all textile fibers. Its anti-soiling properties are said to be outstanding when compared with other water-repellent finishes. Hy-Ad also helps to prevent build-up of static charges.

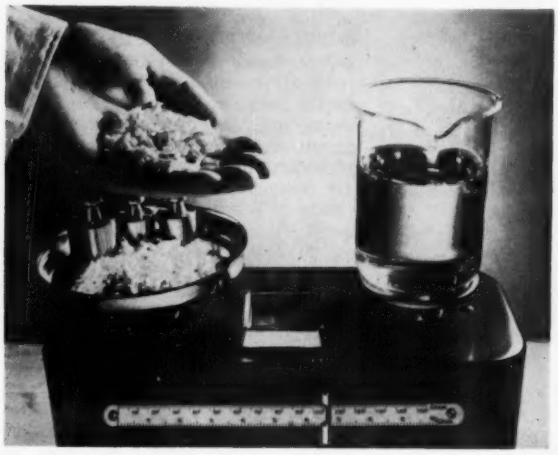
No after-washing or neutralizing is required, unless used in conjunction with thermosetting resins. When used in formulae for producing wash and wear finishes, resistance to abrasion is improved, as well as tear strength and angle recovery. Several suitable catalysts have been developed for use with Hy-Ad and Hy-Ad S in the production of durable hydrophobic effects with or without fluorochemicals.

Exhaustion Dyeing

Sandoz, Inc., has issued a new bulletin covering exhaustion dyeing with fiber reactive Drimarene Turquoise Z-G and Drimarene Navy Z-BL p.a.f. The bulletin contains illustrations and rate-of-dyeing curves for the continuous dyeing of cotton and regenerated cellulosics with both dyes. Copies of the bulletin (No. 1,425) are available to mills and dyehouses which can put the information to practical use. *For copies of the bulletin write the editors.*

Graft Cellulose Introduced

A new wood cellulose to which is grafted a small amount of ethylene oxide was introduced recently by Rayonier, Inc. It was said that the new product, tradenamed "Ethylose" may have advantageous uses as a textile finishing material, as a binder for nonwoven fabrics and as a coating for paper. Rayonier spokesmen also hinted that the new graft cellulose may open the door to future modifications of cellulose by the graft technique that could lead to the introduction of improved performance characteristics of rayon yarns and fabrics.



NEW TYPE OF CELLULOSE—Demonstration of Rayonier's new graft cellulose "Ethylose". Beaker (right) contains clear solution formed from pellets (left).

Dr. R. L. Mitchell, Rayonier's general manager of research, said that Ethylose is a high quality purified wood cellulose modified or grafted with four percent of ethylene oxide to change its properties. The new material is insoluble in water but can readily be dissolved in aqueous alkali to render stable and useful solutions. The material is sold in small pellet form which can be shipped long distances or stored for long periods without deterioration. Currently priced at 50 cents a pound in 50 pound sacks, it is expected by Rayonier that the price will be reduced as the volume of Ethylose made and sold increases.

Rayonier also announced that it had placed in operation a new plant at its Fernandina Beach, Florida facilities for the manufacture of the new graft cellulose material. Mitchell stated that the new plant used continuous automated methods employing new concepts in reaction principles and equipment design.

TEXTILE — NEWS BRIEFS

Butterworth Sales Drive

H. W. Butterworth & Sons Co. has initiated a program aimed at securing broader coverage of the textile industry. Eric B. Norman, working out of the home office at Bethayres, Pa., is now covering mills on the West Coast, New York, Michigan, Wisconsin and Canada. Norman's association with Butterworth supplements coverage of the textile industry by the firm's two sales agents, Industrial Heat Engineer Co., Greenville, S. C., and United States Supply Co., E. Providence, R. I.

Heat-Resistant Fiber

Fiberfrax ceramic fiber, a high temperature insulation developed by Carborundum Co., has passed the stage of pilot plant production and field testing and has been made a standard product of the company's Refractories Division. Current annual sales are in excess of $1,000,000.

Fibers, formed from a mix of high grade alumina and silica sand, are fabricated into over 40 forms, such as blocks, sheets, textiles, paper, blankets, and rope. The material withstands continuous operating temperatures up to 2,300 degrees F, the company reports.

Celanese Design Competition

Celanese Fibers Co. has disclosed details of a design competition open to young professional interior designers. Eligible to enter the competition is any young man or woman 35 years of age or under who has been professionally engaged for not less than one year with a recognized retail interior decoration and design organization in the U.S. Applicants desiring to compete should contact: Celanese Interior Design Competition, Celanese Fibers Co., Dept. H.F.C., 18 Madison Ave., New York 16, N. Y.

Acrilan Blankets Selected

The Chemstrand Corp. reports that blankets of 100% Acrilan acrylic fiber has been adopted for use in all Howard Johnson motor lodges. The Howard Johnson organization is reported to have selected the Acrilan blankets because of their dimensional stability, strong resistance to shrinking, moths, and mildew, and their quick-drying capacity which permits them to be laundered and returned to use within one hour.

'Worth Street Rules'

"Worth Street Rules," the standard code of procedure and trade custom applicable to the purchase and sale of cotton textile and allied lines, as approved and promulgated by 12 industry trade organizations, has been issued in a revised and enlarged printing. Copies are available from The Association of Cotton Textile Merchants of New York, 40 Worth St., New York 13, N. Y. The 128-page book is priced at $2 per copy.

Enrick Paper Gets Award

Professor Norbert Lloyd Enrick, University of Virginia, Charlottesville, received the Best Paper Award for 1961 from the American Society for Quality Control, at the recent Winston-Salem Meeting of the Society's Textile Division. His paper, "Variations Flow Analysis," was originally presented at the 1960 Convention and subsequently published in the journal "Technometrics," issued jointly by the Society and the American Statistical Association.

Enrick was formerly with the Institute of Textile Technology. He is known to our readers from his frequent contributions to MODERN TEXTILES, as well as the author of the Modern Textiles Handbooks on "Quality Control through Statistical Methods," "Modern Mill Controls," and "Mill Test Procedures."

Push Nylon Throw Rugs

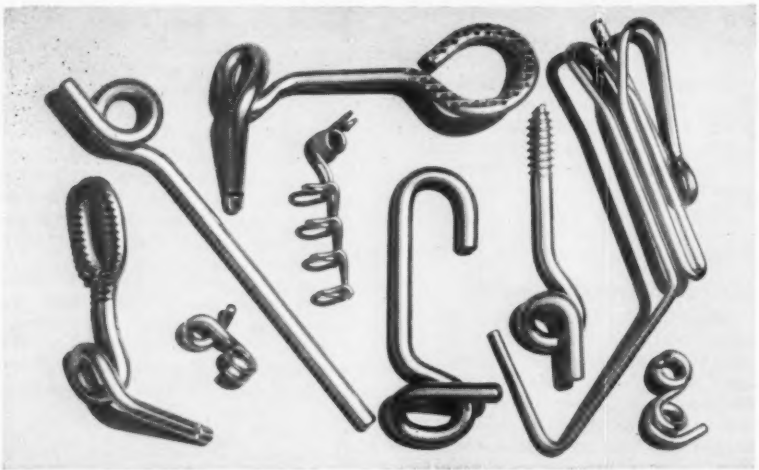
Du Pont has developed a new tagging program to help manufacturers and retailers market throw rugs made with pile of 100% Du Pont nylon staple. To qualify, manufacturers must meet a series of requirements concerning rug quality and tag use.

The purpose of the new program, according to Du Pont, is to give manufacturers and retailers

WHEN IT COMES TO PROTECTION...



HARD CHROMIUM PLATING



Walhard

The Leading Name In Textile **Hard Chromium Plating.**

Chromium plating, as does everything else, comes in various qualities, so you owe it to yourself to buy the best protection possible. Our customers expect the **best Hard Chromium Plating** when they buy **Walhard.**

During 26 years of successful experience, we have proven that fast, efficient service combined with **Hard Chromium Plating** "know how" mean "dollars in their pockets."

Be sure you are getting quality **Hard Chromium Plating** — both satin and polished finish — It costs no more and lasts longer.

WALTON and LONSBURY

79 NORTH AVENUE **ATTLEBORO, MASSACHUSETTS**

an opportunity to link their products directly to Du Pont's advertising and promotional efforts. The nylon staple producer is supporting the tagging program with consumer and trade advertising.

Skinner Converting Operations

New York converting operations of William Skinner & Sons, recently acquired by Indian Head Mills, Inc., are now under the supervision of Peter G. Scotese, vice president and general manager of the company's Finished Goods Division. Wilfred Proud is vice president for all Skinner merchandising and sales activities. The division manufactures and sells Pequot sheets and pillow cases and Indian Head brand fabrics.

Maremont—Saco-Lowell Merger

Maremont Corp., the new name of the former Maremont Automotive Products, Inc., now owns 91.8% of the common stock of Saco-Lowell Shops, manufacturers of textile machinery. This represents the number of shares acquired by Maremont through open market purchases during the past 18 months in addition to stock acquired through an exchange of stock with Saco-Lowell stockholders. Maremont, listed on the New York Stock Exchange, manufactures automotive parts.

Ives Buys Crawford

The Loyal T. Ives Co., manufacturer of precision and spring needles and sheet metal parts for textile machines, has purchased The Crawford Manufacturing Co. Crawford is a manufacturer of electric stop-motions for circular and flat knitting machines. Its line includes such standard items as control boxes, hole and press off detectors, needle protectors, slub catchers, and tension devices.

Cobble Buys BTM

Cobble Bros. Machinery Co. Ltd., Blackburn, England, builders of Cobble tufting machinery for British and European markets, has bought the whole of the share capital of British Tufting Machinery Ltd., also of Blackburn. Although the managing director of British Tufting Machinery Ltd., S. Shorrock, will remain with the company, Lewis Card and E. Pickering will join the board from Cobble Bros. Pickering will be chairman of directors.

It is said that the research resources of both companies will be pooled. British Tufting Machinery has been Cobble Bros.' competitor in Europe in building broadloom tufting machines. The company has also done pioneer work on carpet printing machines and on fluid bed units.

Allied Chemical Scholarships

Allied Chemical announced continuation of its aid-to-education program under which it will offer 74 fellowships and scholarships in the 1961-62 academic year. The company's first program was launched in 1941. Expenditures in support of education ran to $500,000 last year and the new program will provide substantially the same assistance.

Personnel Notes



Ralph Richardson

(Picture erroneously shown last month with news item on Wm. A. Richardson.)

Philip J. Canepa has been appointed secretary of Industrial Rayon Corp., succeeding **Roman G. Burnor** who has resigned. **Dante N. Biello** was named assistant treasurer and **Louis J. Weisz** was appointed assistant secretary. **Ralph Richardson** has been promoted to assistant sales manager in the rayon textile yarn division.

George G. Armada has been appointed sales promotion manager of the Textile Chemical Department of E. F. Drew & Co., Inc.

Richard Schwartz has been named retail merchandise manager of Celanese Fibers Co., a division of Celanese Corp. of America.

Roy D. Wiggins and **Donald A. Gardner** have been assigned as technical representatives to the southern district of Ciba Co., Inc. **A. R. Thompson**, of the southern district, has retired after 27 years of service with Ciba.

Richard H. Engels has been appointed general accountant of Singer-Fidelity, Inc.

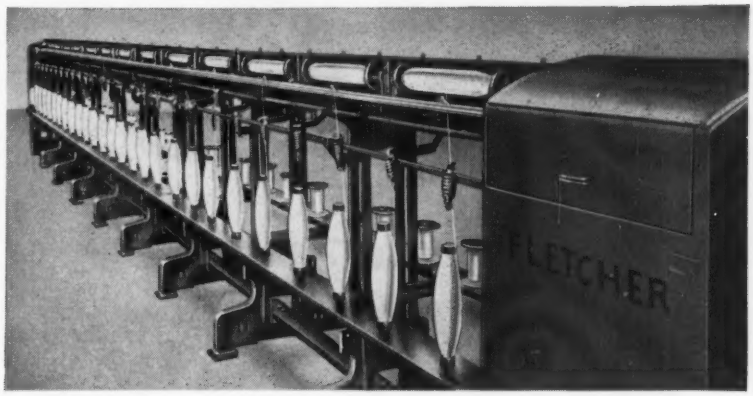
Charles J. Chaban has been appointed vice president of American Finishing Co.'s Research and Development Division.

Douglas H. Sears has joined Pepperell Manufacturing Co. as successor to **Lyman H. Smith**, now vice president and treasurer of Berkshire Hathaway, Inc.

FLETCHER

high speed WINDER REDRAW

FOR GLASS AND SYNTHETIC YARNS



Here's the most modern redraw machine, Fletcher-engineered to give you top production.

- Vibration free operation
- Perfect wound bobbins at higher speeds
- Cleaner yarn because of no lubrication in the yarn area
- Three styles of bobbins, all sizes
- Higher speeds. 500 to 750 ypm on 2-pound bobbins.
- Pirns, bottle bobbins and Spools

NEW FILLING WIND PIRN gives tension-free delivery

Eliminates all tension problems for yarn down to 15 denier nylon.

Absolutely a "must" for hosiery, glass, and fine rayons.

TRY BEFORE YOU BUY with 3-month trial rental plan

Redraw, 8 Positions — Production Models O

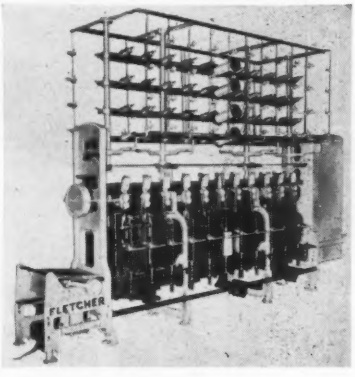
Master Duplex, 20 positions — Shipped Completely Erected

The MASTER DUPLEX *Unsurpassed for glass fibers*

New precision-built machine has speeds up to 9,000 rpm doubling, twisting and novelty for all yarns—glass, synthetic or natural.

FLETCHER BIG 6 POUND PACKAGE JUMBO DUPLEX DOUBLER TWISTER

Six pounds of continuous twisted and double high quality glass, textured, synthetic and cotton yarns. Bottle Bobbin, Straight or Tapered Pirn Package. 22-spindle and 72-spindle 6" ring. 9-inch and 10-inch traverse. Novelty yarn at 900 rpm spindle speed.



FLETCHER INDUSTRIES

Hasbrook Avenue and Beecher St., Cheltenham, Pa.

FLETCHER SOUTHERN — **SOUTHERN PINES, N. C.**

FLETCHER INDUSTRIES — **STATESVILLE, N. C.**

the NEW Model FDA-RC

Fade-Ometer®



Exposure conditions can be varied to provide good correlation with either the Daylight or Sunlight exposure methods.

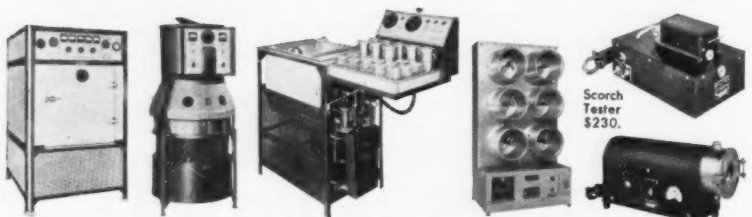
As the two natural light methods on moisture sensitive materials can produce wide variation in colorfastness ratings, it would be expected that two different exposure conditions in the Fade-Ometer would be necessary to duplicate them.

To simulate the day and night cycling of the Daylight method where the specimens are left in the cabinet 24 hours a day, new conditions of higher relative humidity during alternate periods of light and darkness are utilized in the Model FDA-RC.

The new Fade-Ometer may also be operated under the standard conditions for the FDA-R to duplicate the Sunlight method where the specimens are placed in the cabinet only between 9 and 3 on sunny days.

Added new features include an electrically operated atomizer, combination Cycle Meter and Time Switch, and modification of the electrical circuits to permit operation of the components during the light-off period.

All Model FDA-R Fade-Ometers now in use may be easily converted into the Model FDA-RC. *Write for full details on either a new machine or on conversion of present equipment.*



Weather-Ometer® $2755 up.

Fade-Ometer® $1350 up. Complete with supplies.

Launder-Ometer® $875 complete with accessories and supplies.

Random Tumble Pilling Tester $485 to $890.

Scorch Tester $230.

Accelerotor® $485

ATLAS ELECTRIC DEVICES CO., 4114 N. Ravenswood Ave., Chicago 13, Illinois, U.S.A.

Sales representatives in principal cities throughout the world

Howard Rosenfeld has been appointed manager of product and fabric development for the Research Fund Program of the Linen Supply Association of America.

Dr. Alfred E. Brown has been elected president of Harris Research Laboratories, Inc.

Jackson Bauer has been appointed director of Quaker Chemical Products Corp.'s textile research and development laboratories.



Ch. P. Bertland

Charles P. Bertland has been named director of sales of Hercules Powder Co.'s Fiber Development Department.



E. E. Dandeneau

Edras E. Dandeneau has been appointed assistant sales manager of the men's wear department of the Woolen Division of Amerotron Co., a division of Textron, Inc.

Millard G. Gamble has been appointed director marketing services for Du Pont's Textile Fibers Department, succeeding **Henry C. Froehling** who has been named to the newly-created position of assistant director of marketing services. **Howard P. Brokaw** succeeds Mr. Gamble as acting director of the Industrial Marketing Division.

(Continued on Page 57)

U. S. MAN-MADE FIBER PRICES

This schedule lists the prices of yarn, staple and tow as reported by the producers in April 1961. All prices are given to change without notice.

CELLULOSIC YARNS

ACETATE

American Viscose Corp.

Current Prices Effective March 22, 1960

Bright and Dull

Denier & Filaments	Intermediate Twist** Twister Cones	Twister T-Tubes	Warps	Spinning Twist Cones & C-Tubes	Warps
40/11	$	$	$	$	$1.14
45/14	....	....	....	....	1.03
55/14-20	.99	.97	1.00	.93	.87*
75/18	....	....	....	....	.90
75/20	.95	.93	.96	.89	.90
100/28	.91	.89	.92	.85	.86
120/32	.82	.80	.83	.76	.77
150/36	....	....	....	....	.70
150/41	.74	.73	.75	.69	.70
200/54	.70	.69	.71	.66	.67
240/80	....	....	....	.65	.66
300/80	.66	.65	.67	.62	.63

* Tricot Spools Only.
** Standard Twist 2¢ Additional.
Terms: Net 30 Days.

Celanese Fibers Company

Current Prices Effective March 22, 1960

Acetate Filament Yarn Prices
Bright and Dull

Denier and Filaments	Intermediate Twist 4 & 6-Lb. Cones	Beams	4-Pound Cheeses	Spinning Twist Cones	Beams	O Twist Tubes
45/13	$1.12	$1.13	$	$	$1.03*	$ ....
55/15	.99	1.00	....	....	.87*	.82
75/20	.95	.96	....	.89	.90	.86
75/50	.97	.98	....	....	.92	....
100/26-40	.91	.92	....	.85	.86	....
120/40	.82	.83	....	.76	.77	....
150/40	.74	.75	.74	.69	.70	....
200/52	.70	.71	....	.66	.67	....
240/80	.68	....	....	.64	....	....
300/80	.66	.67	....	.62	.63	....
450/120	.66	.67	....	.62	.63	....
600/160	.65	.66	....	....	....	....
900/80-240	.63	.64	....	....	....	....

* Tricot beams only. This item with Permachem—$.05 additional.
3T/10 electrical finish available at no premium.

3 to 5 turns on Cones or Beams	$.02 Additional
Over 5 turns—55 denier	$.06 Additional per Turn
Over 5 turns—75 denier	$.04 Additional per Turn
Over 5 turns—100 denier	$.03 Additional per Turn
Over 5 turns—150 denier & coarser	$.02 Additional per Turn
150 Denier 12-TM Tubes	$.73
3 Pound Cheeses	$.01 Less than 4-lb. Cheeses
2-BU and 4-BU Tubes	Same price as 4 & 6-lb. cones
Premium for Serving Tubes	$.05
Part Cone Premiums: 2-lbs.	$.05
1-lb.	$.10
Under 1-lb.	$.20

Celaperm Filament Yarn Prices

Denier and Filaments	Intermediate Twist 4 & 6-Lb. Cones	Beams	Spinning Twist Cones	Beams
55/15	$1.37	$1.38	$1.31	$1.32
75/20	1.34	1.35	1.28	1.29
100/26	1.28	1.29	1.22	1.23
120/40	1.19	1.20	1.13	1.14
*150/40	1.11	1.12	1.06	1.07
200/104	1.05	1.06	1.01	1.02
300/80	1.01	1.02	.97	.98
450/120	.99	1.00	.95	.96
600/160	.97	.98	....	....
900/240	.94	....	....	....

* 150/2Z/40 available in all colors. Contact our District Sales Representative for current availability of colors in other denier.

Over 5 turns—55 denier	$.06 Additional per Turn
Over 5 turns—75 denier	$.04 Additional per Turn
Over 5 turns—100 denier	$.03 Additional per Turn
Over 5 turns—150 denier & coarser	$.02 Additional per Turn

Celaperm Black Yarn Prices
Effective March 22, 1960

Denier and Filaments	Intermediate Twist 4 & 6-Lb. Cones	Beams	Spinning Twist Cones	Beams
55/15	$1.17	$1.18	$1.11	$1.12
75/20	1.14	1.15	1.08	1.09
100/26	1.08	1.09	1.02	1.03
120/40	.99	1.00	.93	.94
150/40	.91	.92	.86	.87
200/52	.85	.86	.81	.82
300/80	.81	.82	.77	.78
450/120	.79	.80	.75	.76
600/160	.77	.78	....	....
900/80	.74	....	....	....

Terms: Net 30 days. Transportation prepaid or allowed to any destination in U.S.A.
Prices subject to change without notice.
All previous prices withdrawn.
Note: Prices on unlisted items can be obtained upon request.
Orders are subject to conditions of sale appearing on our Acknowledgments of Orders.

E. I. du Pont de Nemours & Co.

Textile Fibers Dept.
Current Prices

"Acele"* Acetate
Bright & Dull

Denier & Filament	Zero Twist Tubes	Beams	Low Twist Cones	Beams	Intermediate Twist 2 & 4 Lb. ⅝" Tbs.	4 & 6 Lb. Tw. Tbs.	Cones	Bms.
45-13	$.94	$1.02						
55-18	.82	.86					$.99	$1.00
55-24	.82	.86					.99	1.00
75-24	.86	.89		$.90		$.93	.95	.96
75-50				.92		.95	.97	.98
100-32	.82	.85		.86		.89	.91	.92
120-50	.73	.76		.77		.81	.82	.83
150-40	.66	.60	$.69	.70			.74	.75
200-60	.65		.66	.67			.70	.71
240-80			.65				.69	
300-80	.60	.62	.62	.63	$.66		.66	
450-120	.61		.62	.63	.66		.66	
600-160					.65		.65	
900-44					.63***			
900-240	.61**						.63	
1800-88					.61***			.62***
2700-132					.61***			
3000-210					.61			

1800 Type 20 only.
(B) 1 lb. ⅝" Tubes—add $.02 to 2 & 4 lb. ⅝" Tube Price.
** Bright only 2" Tubes.
*** Type 20 only.

Color-Sealed

Denier & Filament	Zero Twist Tubes	Beams	Low Twist Cones	Beams	Intermediate Twist Cones	Beams
75-24	$1.18	$1.28		$1.29	$1.34	$1.35
100-32	1.14			1.23	1.28	1.29
150-40	1.03	1.06	1.06	1.07	1.11	1.12
300-80		.97			1.01	1.02

Black

Denier & Filament	Zero Twist Tubes	Beams	Low Twist Cones	Beams	Intermediate Twist 4 & 6 Lb. Tw. Tbs.	Cones	Beams
55-18	$1.045					$1.17	$1.18
75-24	.98	$1.08		$1.09		1.14	1.15
100-32	.94			1.03	$1.06	1.08	1.09
150-40	.83	.86	$.86	.87	.91	.91	.92
200-60					.85	.85	.86
300-80	.75	.77	.77	.78	.81*	.81	.82
900-44					.74*	.74	

* 2 & 4 lb. ⅝" tbs. is same price as 4 & 6 Tw. Tbs.

Specialty Yarns
Cycloset for Tricot

	Tubes	Beams
40-13 Natural	$1.07	$1.14
55-18/24 Natural	.83	.87
75-24 Natural	.87	.90
100-32 Natural	.83	.86
40-13 Black	1.22	1.29
55-18 Black	1.08	1.12

Terms: Net 30 days. Subject to changes without notice.
Domestic Freight Terms are F.O.B. shipping point, freight prepaid our route within the continental limits of the United States, excluding Alaska.
* Dupont's Trademark for its acetate yarn.

Eastman Chemical Products, Inc.

Tennessee Eastman Co.
Current

"Estron"* Yarn, Bright or Dull — White

Denier & Filament	Regular Twist Cones	Beams	Intermediate Twist Cones	Beams	Low Twist Cones	Beams	Zero Twist Tubes	Tricot Beams Spun Twist	Zero Twist
55/13	$1.01	$1.02	$0.99	$1.00	$0.93	$0.94	$0.82	$0.87	$0.86
75/19	.97	.98	.95	.96	.89	.90	....	.90	....
75/49	.99	1.00	.97	.98	....	....	....	....	....
100/25	.93	.94	.91	.92	.85	.86	....	....	....
120/30	.84	.85	.82	.83	.76	.77	....	....	....
150/38	.76	.77	.74	.75	.69	.70	.66	....	....
200/50	.72	.73	.70	.71	.66	.67	....	....	....
300/75	.68	.69	.66	.67	.62	.63	.60	....	....
450/114	.68	.69	.66	.67	.62	.63	....	....	....
600/156	.67	.68	.65	.66	.62	.63	....	....	....
900/230	.65	.66	.63	.64	....	....	.61	....	....
Heavier	....	....	....	....	....	....	.56	....	....

Current

"Chromspun"*—Standard Colors (Except Black)

Denier & Filament	Regular Twist Cones	Regular Twist Beams	Intermediate Twist Cones	Intermediate Twist Beams	Low Twist Cones	Low Twist Beams
55/13	$1.39	$1.40	$1.37	$1.38	$1.31	$1.32
75/19	1.36	1.37	1.34	1.35	1.28	1.29
100/25	1.30	1.31	1.28	1.29	1.22	1.23
150/38	....	....	1.11	1.12	1.06	1.07
300/75	....	....	1.01	1.02	.97	.98
450/114	....	....	.99	1.00	.95	.96
900/230	....	....	.94	.95	....	....

Current Prices

"Chromspun"*—Black

Denier & Filament	Regular Twist Cones	Intermediate Twist Cones	Intermediate Twist Beams	Low Twist Beams
55/13	$1.19	$1.17	$1.18	$1.12
75/19	1.16	1.14	1.15	1.09
100/25	1.10	1.08	1.09	1.03
150/38	.93	.91	.92	.87
200/50	.87	.85	.86	.82
300/75	.83	.81	.82	.78
450/114	.81	.79	.80	.76
900/230	.76	.74	.75	....

Prices are subject to change without notice.
Prices on special items quoted on request.
Terms: Net 30 days. Payment—U. S. A. dollars.
Transportation charges prepaid or allowed to destination in continental United States except Alaska. Seller reserves right to select route and method of shipment. If Buyer requests and Seller agrees to a route or method involving higher than lowest rate Buyer shall pay the excess of transportation cost and tax.
* "Estron" is a trade-mark of the Eastman Kodak Company.
* Chromspun is a trade-mark of the Eastman Kodak Company.

RAYON

American Bemberg

Current Prices

Regular Production Reel Spun Yarn

Den/Fil	No Twist Skeins	Twist Skeins & Cones	High Twist Skeins & Cones 8½ Turns	12 Turns	15 Turns	18 Turns
40/30	$1.49	$1.95	....	....	....	$2.06
50/36	1.29	1.55	....	....	....	1.85
65/45	1.22	1.38	....	$1.61	....	1.66
75/60**	1.11	1.25	....	1.48	$1.53	1.56
100/74**	1.02	1.15	....	1.40	1.45	1.51
125/60	1.01	1.12	$1.16	1.37	....	....
150/120	.99	1.08	1.18	1.33	....	....
300/225	....	1.01	....	....	1.14	....
900/744	....	.91	....	....	....	....
1800/744	....	.91	....	....	....	....

*Includes twists up to 6 turns on 40 and 50 denier, and up to 5 turns on heavier deniers.
** Spun Dyed Cupracolor Black 15¢ per lb. extra.

"44" HH Spool Spun Yarn

Den/Fil	No Twist Tubes	No Twist Beams	5 Turn Beams	5 Turn Cones	12 Turn Beams	12 Turn Cones	15 Turn Cones
40/30	$1.35	$1.35	....	....	....	....	....
50/36	1.05	1.05	....	....	....	....	....
65/45	1.13	....	....	....	....	$1.50	....
75/45*	1.04	....	$1.15	$1.15	$1.38	1.38	$1.46
100/60*	.96	....	1.10	1.10	1.30	1.30	1.38
125/60	.91	....	1.06	1.06	....	....	....
150/90*	.83	....	.87	.87	1.21	1.21	1.30
150/120	.87	....	....	.99	....	....	....

* Available also in Spun Dyed Cupracolor Black at 15¢ per lb. extra.

"44" HH "Parfe" Spool Spun Yarn

Den/Fil	No Twist Cones	5 Turn Cones	5 Turn Beams	12 Turn Cones	15 Turn Cones
50/36	$1.60	$1.85	$1.85	....	....
75/45	1.48	1.58	1.58	1.78	1.88
100/60	1.38	1.48	1.48	1.68	1.78
150/90	1.21	1.28	1.28	1.63	1.73
300/120	1.21	1.28	....	....	....

Nub-Lite (Short Nubbi)

Code	Den/Fil	2½ Turn Natural Cones	2½ Turn Cones*	5 Turn Natural Cones	5 Turn Cones*
1515	160/90	....	....	$1.50	$1.40
1519**	155/90	....	....	1.50	1.40
2008	200/120	....	....	1.11	1.01
3002	315/180	$1.15	$1.05	....	....
4011	410/224	1.15	1.05	....	....
6001	600/360	1.13	1.03	....	....
8001	860/450	1.13	1.03	....	....

* Basic price for cones when dyed. Dyed Colors 30 and 35 cents above basic price. Prices based on 200 lb. dyed lots only. Prices for natural yarn skeins same as natural cone prices.
** Code 1519 can be run in warp or filling.

CUPIONI Type B

Code	Den/Fil	2½ Turn Cones
9650	70/45	$1.69
9660	100/60	1.53
1545	150/90	1.30
9730	285/135	1.15
9792	450/225	1.15
9819	600/372	1.12
9837	940/372	1.02

"Spun Dyed Cupracolor is spun 150, 285, and 940 deniers at 35¢ per pound extra. Cupracolor Black Comes in all deniers."

STRATA SLUB

Code	Den/Fil	Twisted Cones	Price
9747	275/225	3½ Turns	$1.25
9798	450/372	2½ Turns	1.15
9823	600/372	2½ Turns	1.10
9847	960/372	2½ Turns	1.02
9855	1290/372	1½ Turns	1.00
9934	2680/744	1½ Turns	1.00

"Spun Dyed Cupracolor is spun in 600 and 960 deniers at 35¢ per pound extra."

FLAIKONA

Code	Den/Fil	Twisted Cones	Price
9699	150/148	2½ Turns	$1.35
9769	300/224	2½ Turns	1.25
9782	450/270	2½ Turns	1.05
9809	600/360	2½ Turns	1.05
9840	900/450	2½ Turns	1.00
9924	2000/744	2½ Turns	.95

TUSSON

Code	Den/Fil	2½ turn Cones	3½ turn Cones
9668	100/60	....	$1.58
9678	150/90	$1.35	
9745	285/135	1.20	
9783	450/225	.85	
9821	600/372	.80	
9828	940/372	.75	

Spun Dyed Cupracolors 30¢ extra per lb.
Available in 450 denier only.
Terms: Net 30 days, F.O.B. shipping point. Minimum freight allowed within the continental limits of the United States, excluding Alaska. Goods after shipment shall be at buyer's risk. Merchandise transported in seller's own trucks or those of its affiliates is sold F.O.B. delivery point. Prices are subject to change without notice.

American Enka Corp.

Current Prices
Effective February 29, 1960
Standard Quality Yarns

NATURAL

Den./Fil.	Luster	Turns		Weaving Cones	Weaving Beams	Skeins Long	Skeins Short	Cakes	Knitting Cones
50/18	E	5	S	....	....	....	....	....	1.63
50/20	B	4	S&Z	....	....	....	....	1.52	1.64
75/10	B	3	S&Z	....	....	....	....	1.02	....
75/18	E	4	S	....	....	....	....	....	1.14
75/30	B	2.5,4	S&Z	1.14	1.14	1.32	1.41	1.02	1.14
75/30	B	8	S	1.24	....	1.49	1.59	1.12	1.24
75/45	P,E	2.5,4,5	S&Z	1.14	1.14	1.32	1.41	1.02	1.14
75/60	B,P	3,4	Z	1.16	....	....	....	1.04	....
100/14	B	3	S&Z	....	....	1.15	1.23	.90	....
100/40	B,E	12	S&Z	....	....	....	....	....	1.29
100/40	B,P,E	4,5	S&Z	.98	....	....	....	.90	.98
100/40	B	6	S	1.17	....	1.34	1.44	1.09	....
100/40	B,P	2.5,4	S&Z	.98	.98	1.15	1.23	.90	....
100/60	B	4	S&Z	....	....	....	....	.90	....
100/60	E	2.5	S	1.00	1.00	....	....	.92	....
125/40	E	3	Z	....	....	....	....	.87	.90
125/50	B,P	3	S	.96	.96	....	....	....	....
150/40	B,E	0		.745	....	....	....	....	....
150/40	B,P,E	2.1,3	S&Z	.82	.82	.96	1.03	.78	.82
150/40	B,E	5	S&Z	.90	.90	1.15	1.25	.86	....
150/40	B,E	8	S&Z	.95	.95	1.20	1.30	.91	....
150/60	B	3.05		.82	.82	....	....	....	....
150/90	E	2.1	S&Z	.83	.83	....	....	.79	....
200/40	B	2.1	S	.81	.81	.94	1.01	.77	....
200/40	P	3	Z	....	....	.94	1.01	.77	.81
250/60	P,E	2.4	Z	....	....	.93	1.00	.77	.80
300/30	E	3	S	.81	.85	....	....	....	....
300/40	B	3.2	Z	.73	.73	....	....	....	....
300/50	B,E	3	S	.73	.76	....	....	....	....
300/60,120	B,P,E	2.1	S&Z	.73	.73	.82	.89	.71	.73
300/60	B	3.5	S	.73	.73	.82	.89	.71	....
300/60	B	6	S	.86	.86	....	1.00	.84	....
300/120H.T.	B	2.5	S	.75	.75	....	....	.73	....
450/60	B	3	S	.69	.71	....	....	.67	....
450/80	B,E	3	S	.69	.71	.78	.85	.67	....
600/80	B,E	3	S	.73	.75	....	....	....	....
600/120	B,E	3	S	.69	.71	.78	.85	.67	....
900/120	B	3.4	S	.69	.71	.78	.85	.67	....
900/120H.T.	B	3.4	S	.71	.71	....	....	.69	....

B = Briglo
P = Periglo (Semi-Dull)
E = Englo (Dull)
H.T. = High Tenacity

Jetspun® (Colored Yarns)

Den./Fil.	Tenacity	Turns	Weaving Cones	Beams	Colors
100/40	Regular	2.5S	$1.35	$1.35	All
150/40	Regular	2.1S	1.17	1.17	All
200/40	Regular	8.0S	1.28	1.28	All
300/120	Regular	2.1S	1.09	1.09	All
450/80	Regular	3.0S	1.05	1.05	All
600/80	Regular	3.4S	1.04	1.04	All
300/40	High	3.4S	1.11	1.11	All
900/120	High	3.4S	1.06	1.06	All

® Registered Trade Mark for American Enka Solution-dyed Rayon Yarn.

Skyloft® (Lofted Rayon Filament Yarns)
Natural and Jetspun®

Denier	Denier per Filament	Twist	Cones or Tubes Natural	Black	Other Colors
1000	7.5	3.4S	$.82	$1.06	$1.06
5300	15	3.0S&Z	.65	.75	.82

Registered Trademark for American Enka Texturized yarn.

American Viscose Corp.

Effective October 13, 1959

Graded Yarns

Denier	Filament	Type	Short Skeins	Long Skeins	Cones Tubes	Beams Spools	Cakes
			Regular Turns				
75	10-30	Bright	$1.41	$1.32	$1.14	$1.14	$1.02
75	30	Dull	....	....	1.14	1.14	1.02
100	14-40	Bright	1.23	1.15	.98	.98	.90

William F. Piekarski has been named superintendent of the Woven Fabrics Division of Troy Mills Inc.

S. F. Adams has been appointed general sales manager of American Paper Tube Co.



W. E. Brewer

Walter E. Brewer has been named general sales manager for the Industrial Division of Nopco Chemical Co.



J. R. Potter

J. Robert Potter has been elected president and treasurer of Lockwood Greene Engineers, Inc., succeeding **William J. Heiser,** who was named chairman of the board.

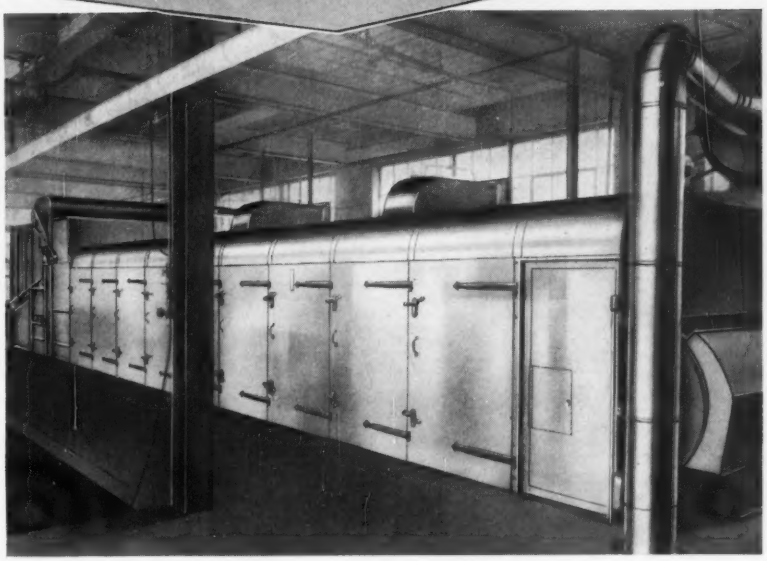
Robert Drainville has joined Whitin Machine Works as general accountant in the financial department.

Van N. Ruffner has been named personnel director of Roberts Co.

J. R. Heard has been appointed manager of the textile division of technical sales service and field development of Penick & Ford, Ltd. **G. M. Anderson** has been named assistant sales manager of the Corn Refining Division, and **John P. Bainbridge, Jr.,** appointed New England district sales manager.

(Continued on Page 68)

How to Cut Costs in Fibre Processing



The SARGENT System...

Fully Automatic Handling of Natural and Synthetic Staple from Dye Kettle or Washer to Card.

Delivers uniformly dried, lofty stock at high volume rate. Releases manpower for other work. Better than 1,000 lbs. per hour produced continuously, day in, day out. Installations have cut processing costs better than one-third.
This highly efficient, economical Sargent-designed system has only five units:

1. Rotary type Wet Feeder takes air-blown wet fibres from the dyehouse, feeds them to squeeze roll machine. Has ball-bearing main cylinder with stainless steel teeth, a rotary comb, two heavy rubber aprons — one to feed fibre to main cylinder, the other to deliver fibres to nip of squeeze rolls.
2. Extractor has sectional rubber ring roll, hammered steel bottom roll with fine knurl. Pneumatic loading, two air cylinders, control panel and indicating dial. Working at 80 lbs. pressure estimated air consumption is 4 cfm.
3. Stock Fan and Cyclone Condensor. Stock fan takes fibres from extractor, delivers them to cyclone condensor mounted above hopper of dryer feed, opening fibres and conditioning them for even, smooth delivery to dryer.
4. Rotary Feeder delivers even layer of fluffed fibres to dryer conveyor. Designed to effect a semi-combing action, eliminating matted bunches for more uniform drying, fewer neps at card.
5. Dryer with Blow-Up Section. Air-flow is down through traveling stock, with up-draft at blow-up section, midway of dryer. A highly efficient way to redistribute fibres evenly over stainless steel perforated flight conveyor and to even out moisture content of all fibres. Equipped with air-operated recording type temperature controls complete with steam control valves and air filter. These dryers are designed for easiest cleanout, fastest installation and highest operating economy of any dryer on the market.

Every machine in the system boasts Sargent's rugged construction; with simplicity of design, minimum maintenance, dependable, steady performance. Here is a system to save you money, man-power, time. Let us give you complete details.

C. G. SARGENT'S SONS CORPORATION
Graniteville, SINCE 1852 Massachusetts

PHILADELPHIA • CINCINNATI • CHARLOTTE • ATLANTA • HOUSTON • DETROIT
NEW YORK • CHICAGO • LOS ANGELES • TORONTO

100	60	Dull	....	....	1.00	1.00	.92
150	24-40	Bright	1.03	.96	.82	.82	.78
150	40	Semi-Dull	1.03	.96	.82	.82	.78
150	40	Dull	....	....	.82	.82	.78
150	90	Dull	....	....	.83	....	.79
200	10-44	Bright	1.01	.94	.81	.81	.77
250	60	Semi-Dull & Dull	1.00	.93	.80	.80	.77
300	15	Bright	....	.85	.78	.78	....
300	30	Dull Flat Filament	....	....	....	.85	....
300	44	Bright & Dull	.89	.82	.73	.73	.71
300	234	Dull	....	....	.83	....	.81
450	60-100	Bright	....	.78	.69	.71	.67
600	100	Bright & Dull	....	.78	.69	.71	.67
900	50-100-150	Bright	....	.78	.69	.71	.67
1200	75	Bright	....	.78	.69	.71	....
2700	150	Bright	....	.78	.69	.71	....

Extra Turns Per Inch

150	40	Bright	6-Turns	$1.25	$1.15	$ .90	$ .90	$ .88
200	44	Bright	6-Turns	....	1.05	.96	.96	....
300	15	Bright	5-Turns	....	....	.86	.86	....
300	44	Bright	4.3-Turns	....	....	.81	....	.79
300	44	Bright	6-Turns	.97	.90	.86	.86	.84
300	120	Rayflex	6-Turns	....	....	.93	.93	....
600	30	Bright	5-Turns	....	.86	.82	.82	.80

Rayflex Yarns

150	40-60	Rayflex	$	$	$ .85	$ .85	$ .81
200	75	Rayflex	....	....	.84	.84	.80
300	60-120	Rayflex	....	....	.75	.75	.73
450	120	Rayflex	....	....	.71	.71	.69
600	234	Rayflex	....	....	.71	.71	.69
900	350	Rayflex	....	.80	.71	.71	.69

Spun Dyed Yarns

Denier	Type	Cones/Tubes Beams/Spools
75	Regular Strength	$1.71
100	Regular Strength	1.35
150	Regular Strength	1.17
200	Regular Strength	1.14
300	Regular Strength	1.09
450	Regular Strength	1.05
600	Regular Strength	1.05
900	Regular Strength	1.05
300	High Strength	1.11
450	High Strength	1.06
900	High Strength	1.06

Avicron Yarns

Avicron Yarns

Denier	Filament		Cones/Tubes Beams/Spools
1800	100-200	Singles & 2 Ply	$.61
2700	150-300-980	Singles & 2 Ply	.58
2700	980	Singles 5 TPI	.61

Viscose Filament Yarns

The following material deposit charges are required:

Metal Section Beams	$170.00 each
Metal Section Beam Racks	75.00 each
Metal Tricot Spools—14" flange	30.00 each
21" flange	60.00 each
32" flange	150.00 each
Metal Tricot Spool Racks—14" flange	135.00 each
21" flange	100.00 each
32" flange	75.00 each
Wooden Tricot Spool Crates	20.00 each
Cloth Cake Covers	.05 each

Same to be credited upon return in good condition—freight collect.

Celanese Fibers Company

Effective October 12, 1960

Viscose Rayon Filament Yarn Prices—Bright and Dull

Denier/Fil/Twist		Beams	Cones	Cakes
75/30/2Z		1.11		
75/30/3		1.11	1.10	.98
100/40/2Z		.97		
100/40/3		.97	.96	.88
100/40/5			1.02	.95
100/60/2Z	NS	.97	.96	
100/60/3			.98	.90
125/40/2Z		.95		
125/40/3		.95	.94	.87
150/40/0	NS		.74½	
150/40/2Z		.81		
150/40/3		.81	.79½	.76
150/40/5			.90	.86
150/40/8			.95	.91
150/40/10			.98	.94
150/90/0	NS		.77½	
250/60/0	NS		.74	
250/60/3			.80	.77
300/50/0	NS		.70	
300/50/2Z		.72		
300/50/3		.72	.70½	.69
450/60/0	NS	.68	.67	
450/60/3		.70	.69	

Terms: Net 30 days. Transportation prepaid or allowed to any destination in U. S. A.

Prices subject to change without notice.

All previous prices withdrawn.

Prices on unlisted items can be obtained upon request.

Orders are subject to conditions of sale appearing on our acknowledgments of orders.

E. I. du Pont de Nemours & Co.

Textile Fibers Dept. Current Prices

Effective December 11, 1960

Bright and Dull

Den.	Fil.	Turns/Inch Up to		Beams	Cones (A) Tubes	Cones (A) Cakes
40	20	3	Textile "Cordura"*		$1.97	$1.92
50	20	3	Textile "Cordura"		1.72	1.67
50	35	3	Textile "Cordura"		1.77	
75	30	3		$1.14	1.14	1.02
100	40	3	Bright	.98	.98	.90
100	60	3	Dull		1.00	.92
125	50	3		.96	.96	.87
150	40	3		.82	.82	.78
150	60	3	Bright	.82	.82	.78
150	60	3	Textile "Cordura"		.875	.845
150	90	3	Dull		.83	
150	100	3	Dull		.83	
300	50	2.5		.73	.73	.71
300	120	3	Textile "Cordura"	.74	.74	.72
450	72	3		.71	.69	.67
600	96	3	Bright	.71	.69	.67
600	240	3	Textile "Cordura"	.72	.70	
900	50	3	Bright	.71	.69	.67
900	144	3	Bright	.71	.69	.67
2700	150	3	Bright	.71	.69	

Thick and Thin

150	90	3	#7 Bright		1.08
200	80	3	#7 Bright		1.08
450	100	3	#7 Bright		.92
1100	240	3	#60 Bright		1.03
2200	480	3	#60 Bright		.98

Plush

300	30	3	Dull	.85		

(A) 2¢/lb. additional for cones less than 3#.

Terms: Net 30 days.

Domestic Freight Terms are F.O.B. shipping point, freight prepaid our route within the continental limits of the United States, excluding Alaska.

* "CORDURA" and "SUPER CORDURA" are Du Pont's registered trade-marks for its high tenacity rayon yarn.

Industrial Rayon Corp.

Effective June 29, 1959

Continuous Process Textile Yarns

Denier	Filament	Turns per In.	Type	Beams	2.8# Cones	4.4# Cones and Tubes
150	40	2.5"S"	Dull	.82	.82	
150	40	2.5"S"	Bright	.82	.82	
200	20	2.5"S"	Bright	.81	.81	
300	44	2.5"S"	Bright	.73	.73	
450	60	2.0"S"	Bright	.69		.69
600	90	1.5"S"	Bright	.69		.69
900	50	2.0"S"	Bright	.69		.69
900	150	2.0"S"	Bright	.69		.69
1100	480	2.0"Z"	Bright extra strong	.66		.66

Lustre #4 is semi-dull.

Prices are subject to change without notice.

Strawn Monofilament

Denier	Filament	Turns per In.	Type	4.4# Cones	Spools and Tubes
450	1	0	Bright and Dull	1.00	1.05
450	1	2	Bright and Dull	1.00	1.05
1250	1	0	Bright and Dull	1.00	1.05
1250	1	2	Bright and Dull	1.00	1.05

Terms: Net 30 days f.o.b. point of shipment; title to pass to buyer on delivery of goods to carrier. Domestic transportation charges prepaid with transportation allowed at lowest published rate to all points in continental United States except Alaska.

Prices are subject to change without notice.

North American Rayon Corp.

Current Prices

Denier/Filament	Twist	Knitting* Cones	No Twist Knitting Cones	Weaving Cones, Velvet Cones, Beams, Tubes**	Untreated Cakes
Normal Strength Yarns — NARCO					
75/30	3.5			1.14	1.02
75/30	7			1.27	
75/30	12			1.35	
75/30	15			1.37	
75/30	20			1.40	
100/40/60	3.5			.98	.90
100/40	12			1.22	
125/25/60	3			.96	.87
125/52	10			1.13	
150/42	0		.74½		
150/42/60	3	.80½		.82	.78
300/75	0		.71		
300/75	3	.73		.73	.71
900/46	2.5	.69		.69	
1800/92	2.5	.69		.69	

* Oiled Cones $.01 per pound extra for Graded Yarns only.

** 1 lb. Tubes $.02 per pound extra for Graded Yarns only.

"Terms: Net 30 days, F.O.B. shipping point. Minimum freight allowed within the continental limits of the United States, excluding Alaska. Goods after shipment shall be at buyer's risk. Merchandise transported in seller's own trucks or those of its affiliates is sold F.O.B. delivery point. Prices are subject to change without notice."

TRIACETATE

Celanese Fibers Company

Current Prices

Arnel Yarn Prices
Bright & Dull

Effective August 19, 1958

Denier and Filaments	Cones	Beams	Thick and Thin Cones
55/LTDZ/15	$	$1.20	$ ....
55/2Z/15	1.32	1.33	....
75/LTDZ/20	....	1.16	....
75/2Z/20	1.21	1.22	....
100/2Z/26	1.14	1.15	....
150/2Z/40	.95	.96	....
200/2Z/40	....	....	....
200/2Z/52	.92	.93	1.25
300/2Z/80	.87	.88	1.23
450/2Z/120	.86	.87	....
600/2Z/160	.85	.86	1.21

3 to 5 Turns on Cones or Beams—$.02 Additional
Premium for Black Arnel—$.25 Per Pound
Premium for Navy Arnel—$.37 Per Pound

Terms: Net 30 days. Transportation prepaid or allowed to any destination in U.S.A.

Prices subject to change without notice.

All previous prices withdrawn.

Note: Prices on unlisted items can be obtained upon request.

Orders are subject to conditions of sale appearing on our Acknowledgments of Orders.

CELLULOSIC HIGH TENACITY YARN and FABRIC

American Enka Corp.

Effective February 6, 1961

Industrial Yarn Prices

Prices Subject To Change Without Notice

	Denier/Filament	Standard Beams	Standard Cones
TYREX (ENKA—5000)	1100/720	.57	.595
	1650/1100	.51	.535
	2200/1440	.48	50.5
	3300/2160	.48	50.5
TYREX FABRIC (ENKA—5000)	1100/720	.59	
	1650/1100	.60	
	2200/1440	.57	
	3300/2160	.57	
SUPRENKA M	1230/720	.57	.595
	1600/1100	.53	.555
	1800/1100	.51	.535
	1870/1100	.51	.535
	2200/1440	.48	50.5
	2400/1440	.48	50.5
	3300/2160	.48	50.5
	3650/2160	.48	50.5
SUPRENKA MS	1100/720	.57	.595
	1650/1100	.51	.535
	2200/1440	.48	50.5
	2200/1440 (5.52)	.505	.53
	3300/2160	.48	50.5
TEMPRA 2000—MECHANICAL AND CHAFER	1100/480	.56	.585
	1230/480	.56	.585
	1650/720	.50	.525
	1820/720	.50	.525
High & Low Elongation	2200/960	.47	49.5
	2400/960	.47	49.5
	3300/2160	.47	49.5
	1130/480 (5.0Z)	.60	.60
TEMPRA 2000—SEWING YARN	1230/480	.62	.62
	1750/720	.52	.52
	1820/720	.51	.51
HIGH TENACITY	300/40, 300/120	.75	.75
	900/120	.71	.71
REGULAR TENACITY	100/40	.98	.98

American Viscose Corp.

Effective February 9, 1961

Tyrex*
Tyrex* Rayon Tire Yarn

Denier	Filament	Twist	Beams	Cones
1100	980	O	.57	.595
1100	980	Z	.57	....
1650	1500	O	.51	.535
1650	1500	Z	.51	....
2200	1500	O	.48	.505
3300	3000	O	.48	.505

Tyrex* Rayon Tire Fabric

Denier	Filament	Carcass	Top Ply	Breaker
1100	980/2	.69	.69	.69
	Factor Open-525	300-490		115-272
1650	1500/2	.60	.61	.635

Factor—determined by dividing total ends by picks.

* Tyrex—Trademark of Tyrex Inc.

Rayon Tire Yarn
Yarn
High Strength

Denier	Filament	Twist	Unslashed Beams	Unslashed Cones	Slashed Beams	Slashed Cones
1100	490	O	....	....	.56	.585
1150	490	Z	.56	.585	....	....
1650	980	Z	.50	.525	....	....
1650	980	O	....	....	.50	.525
1875	980	Z	.50	.525	....	....
2200	980	O	....	....	.47	.495

Super "Rayflex"

Type 120						
1800	1500	O	....	.535	....	....
4400	3000	O	....	....	.48	.505

Chafer Yarn

1100/490 High Strength 5Z Twist	.60	.60

Adhesive Dipped Yarn or Cord

.06 PREMIUM

Cord on cones in regular Tire Yarn twists same as fabric prices.

Other twist combinations—prices quoted on request.

Special packages take premiums indicated:

4.0 oz. Wardwell Tubes	.20
10.5 oz. Wardwell Tubes	.10
1.5 lb. Regular Braider Tubes	.06
3.5 lb. Tubes	.045

Single Yarn—Based on cone price.

Plied Yarn—Based on fabric price.

All yarns sold "Not guaranteed for dyeing"

The following deposit charges are made on invoices:

Beams	$55.00 each
Crates (Metal)	75.00 each
Fabric Shell Rolls	3.50 each

Same to be credited upon return in good condition freight collect.

Rayon Tire Yarn and Fabric

Terms: Net 30 days. Seller to select and to pay transportation charges of common and contract carrier except when shipment moves West of the Mississippi River, in which event the actual cost of transportation to the Mississippi River crossing based on the lowest published freight rate, shall be allowed. Title to pass when merchandise is delivered to consignee. Transportation allowance based on lowest published volume rate shall be granted if merchandise is transported from shipping point in vehicle owned or leased and operated by buyer and title to pass when merchandise is delivered to same.

Price subject to change without notice.

Inferior Yarns—Designated HS-SR	.06 Below First Quality Price
Skein Yarn	.04 Above First Quality Price
Adding 6 Turns to "O" Twist Yarn	.05

"Avisco" Industrial Sewing Thread

Effective March 1, 1961

Denier	Filament	Description	Twist	Package	Price
1100	980	Super "Rayflex" 120	O	9 lb. cone	.64
1100	980	Super "Rayflex" 120	2Z	4 lb. cone	.64
1500	980	Super "Rayflex" 120	O	9 lb. cone	.59
1500	980	Super "Rayflex" 120	2Z	4 lb. cone	.59
1780	1500	Super "Rayflex" 120	O	9 lb. cone	.55
1780	1500	Super "Rayflex" 120	2Z	4 lb. cone	.55

Domestic freight prepaid.

Prices subject to change without notice.

Celanese Fibers Company

Effective December 27, 1955

Fortisan Yarn Prices

Denier	Packages	Natural	Black
30/2.5/40	2 lb. Cones	$3.00 lb.	$3.35 lb.
60/2.5/80	4 " "	2.40 "	2.75 "
90/2.5/120	4 " "	2.25 "	2.60 "
120/2.5/160	4 " "	2.05 "	2.40 "
150/2.5/180	4 " "	1.95 "	2.30 "
270/2.5/360	4 " "	1.85 "	2.20 "
300/2.5/360	4 " "	1.85 "	2.20 "

Terms: Net 30 days. Shipments prepaid to any destination in U.S.A.

Prices subject to change without notice.

All previous prices withdrawn.

Prices on unlisted items can be obtained upon request.

Orders are subject to conditions of sale appearing on our acknowledgments of orders.

Fortisan-36 Rayon Yarn
Bright

Denier and Filament	Twist	4" cones	8" cones	Tubes	Beams
270/280	0.8Z	$2.30			
300/280	0.8Z	$2.05			
300/280	3Z	$2.20			
400/400	0.8Z	$1.75			$1.70
400/400	0			$1.75	
800/800	0.8Z	$1.25	$1.25		$1.20
800/800	3Z	$1.40			
800/800	0			$1.25	
1600/1600	0.8Z	$1.15	$1.15		$1.10
1600/1600	2¼Z	$1.30			
1600/1600	0			$1.15	

Terms: Net 30 days. Shipments prepaid to any destination in U.S.A.

Prices subject to change without notice.

All previous prices withdrawn.

Prices on unlisted items can be obtained upon request.

Orders are subject to conditions of sale appearing on our acknowledgments of orders.

E. I. du Pont de Nemours & Co.

Textile Fibers Dept. Current Prices Effective March 29, 1961

"Super Cordura"*

Den Fil	Turns/in	Beams	Cones
1100-720	2	.57	.595
1200-720	2		.595
1530-960	2		.570
1600-960	2		.555
1650-1100	2	.51	.535
1800-1100	2	.51	.535
2200-1440	2	.48	.505
2400-1440	2	.48	.505

Terms: Net 30 Days.

Domestic Freight Terms are F.O.B. shipping point, freight prepaid our route within the continental limits of the United States, excluding Alaska.

* "CORDURA" and "SUPER CORDURA" are DuPont's registered trade-marks for its high tenacity rayon yarn.

Industrial Rayon Corporation

Effective February 13, 1961

Unbleached Bright High Tenacity Yarns

Single End Beams and Cones—Type 100

Denier	Filament	Turns per Inch	Cones	Beams
1100	720	3.0 "Z"	.585	.56
1150	720	3.0 "Z"	.585	.56
1650	1100	3.0 "Z"	.525	.50
1700	1100	3.0 "Z"	.525	.50
2200	1440	3.0 "Z"	.495	.47
3300	2200	3.0 "Z"	.495	.47

Tyrex

Tyrex Certified Viscose Tire Yarn

Denier	Filament	Twist	Cones	Beams
1100	720	Z	.595	.57
1650	1100	Z	.535	.51
2200	1440	Z	.505	.48
3300	2200	Z	.505	.48

Terms: Net 30 days f.o.b. point of shipment, title to pass to buyer on delivery of goods to carrier. Domestic transportation charges allowed at lowest published rate to all points in continental United States except Alaska.

PRICES ARE SUBJECT TO CHANGE WITHOUT NOTICE.

North American Rayon Corporation

Current Prices

Super Super High Strength Continuous Yarn Type 710		Cones	Beams
1100/720	1.6Z	.57	.57
1650/720/1100	2.0Z	.51	.51

Tire Cord Fabrics Super Super High Strength Type 710	Rolls
1100/720	.69
1650/720	.60

Terms: Net 30 days, f.o.b. shipping point. Minimum freight allowed to consignee's nearest freight station East of the Mississippi River. To points West of the Mississippi River minimum freight to Memphis, Tenn. allowed. Goods after shipment shall be at buyer's risk. Merchandise transported in seller's own trucks or those of its affiliates is sold f.o.b. delivery point.

Prices are subject to change without notice.

CELLULOSIC STAPLE & TOW

ACETATE

Celanese Fibers Company

Effective March 2, 1959

Staple

(Most Deniers Available in Bright or Dull Luster)

Celanese Acetate Staple	
3, 5.5 & 8 Denier (Regular Crimp, Type HC, Type D)	$.36
2, 12 & 17 Denier (Regular Crimp, Type HC, Type D)	.37
35 Denier	.38
50 Denier	.40
Type F—5.5 & 8 Denier	.35
Type F—12 & 17 Denier	.36
Type K—(Available under Celanese License Agreement)	.39
⅜" to ⅛" length (All Deniers)	.03 (Premium)
35 Denier Flat Filament Acetate	.40
Non-Textile Acetate Fibers	.29*

Tow (Celatow)

3, 5.5 & 8 Denier	$.37
2, 12 & 17 Denier	.38
35 Denier	.40
35 Denier Flat Filament Acetate Tow	.42
50 Denier	.42

Terms: Net 30 days. Transportation prepaid or allowed to any destination in U.S.A. east of Mississippi River. Transportation prepaid to any U.S.A. destination west of Mississippi River, but charge is made for the portion of transportation from river crossing nearest customer's location.

Prices subject to change without notice.

All previous prices withdrawn.

* No transportation allowed (F.O.B. shipping point.)

Note: Prices on unlisted items can be obtained upon request.

Orders are subject to conditions of sale appearing on our acknowledgments of orders.

RAYON

American Viscose Corp.

Current Prices

Rayon Staple

	Bright and Dull
Regular	$ .28
"Viscose 22"	.28
1.25 Denier	.31
All Other Deniers	.28
Hi-Crimp	.28
Bleached Crimp	
1.5, 3.0 Denier	.315
Smooth	
8.0 & 15.0 Denier Smooth	.30
22.0 Denier	.32
Bleached	.33
Extra Strength	
0.75 Denier	.40
1.0 Denier	.35
XL	
1.0 Denier	.40
1.5, 3.0 Denier	.37
XLI	.34
Fiber 40	
1.0 Denier	.43
1.5 Denier	.40

Spun Dyed Black Staple

1.5, 3.0, 5.5 Denier	.37
15.0 Denier crimped	.40

Prices of other colors on request.

Tow

1.5, 3.0, 5.5 Denier	.38
9.0 Denier	.37
15.0, 20.0 Denier	.38
Color spun black tow	.42

Terms: Net 30 days.

American Enka Corp.

Current Prices Effective April 1, 1960

Rayon Staple

	Brt.	Dull
Regular Crimp		
1.5 and 3 denier	$ .28	$ .28
High Crimp		
4.5 denier	.28	....
6.5 denier	.28	.28
8 denier	.28	....
15 denier	.28	.28

Celanese Fibers Company

Effective May 1, 1959

Rayon Tow

	Bright & Dull
1.5, 3, 5.5 D.P.F. Total denier 200,000	.35
8 D.P.F. Total denier 207,000	.37

Terms: Net 30 days. Transportation prepaid or allowed to any destination in U.S.A. East of Mississippi River. Transportation prepaid to any U.S.A. destination West of Mississippi River, but charge is made for the portion of transportation from river crossing nearest customer's location.

Prices subject to change without notice.

All previous prices withdrawn.

Note: Prices on unlisted items can be obtained upon request.

Orders are subject to conditions of sale appearing on our Acknowledgments of Orders.

Courtaulds (Alabama) Inc.

Rayon Staple

	Bright	Dull
Regular Rayon Staple Fiber	$.28	$.28

Crimped Rayon Staple

High Crimped Rayon Staple Fiber	$.28	$.28

Coloray® Solution Dyed Rayon Staple

Color	Price per lb.
Black	$.35
Oyster	$.36
Silver Grey	$.41
Mocha	$.41
Tan	$.41
Medium Brown	$.41
Pumpkin	$.41
Aqua	$.42
Rose	$.42
Dawn Pink	$.42
Ecru	$.42
Dark Brown	$.42
Gold	$.45
Lilac	$.45
Slate Grey	$.45
Sulphur	$.46
Nugget	$.46
Light Blue	$.46
Crystal Blue	$.47
Apple Green	$.47
Sage	$.47
Peacock Blue	$.48
Medium Blue	$.50
Indian Yellow	$.51
Dark Blue	$.51
Hunter Green	$.51
Turquoise	$.52
Malachite Green	$.53
Red	$.58

In addition to the above, Black is also available in:

1½ den. 1⅛"	5½ den. 3"
3 den. 1⅛"	5½ den. 6"
3 den. 1-9/16"	

Terms: Net 30 days f.o.b. LeMoyne, Alabama: Minimum transportation allowed to points in U.S.A. east of Mississippi River.

Corval® Cross Linked Rayon

Man-made, cross-linked, regular or crimped cellulosic staple, semi-dull and dull — $.37 per lb.

Topel® Cross-Linked Rayon

Man-made, cross-linked, cellulosic staple, semi-dull and dull — $.37 per lb

Terms: Net 30 days f.o.b. LeMoyne, Alabama: Minimum transportation allowed to points in U.S.A. east of Mississippi River.

The Hartford Fibres Co.

Div. Bigelow-Sanford, Inc.

Rayon Staple

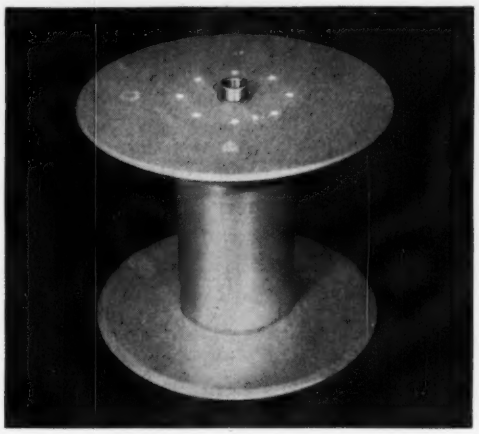
Effective October 20, 1960

Regular 1.5 & 3.0 denier Bright & Dull, 1-9/16", 2"	.28
White (Crimped)	
8 denier 3" Bright	.28
15 denier 3" Bright	.28
15 denier 3" Dull	.28

"KOLORBON"—Solution Dyed Rayon Staple—3" and 6"

	8 Denier Bright	15 Denier Dull	15 Denier Bright
Cloud Grey	.39	.39	....
Sandalwood	.39	.39	....
Nutria	.39	.39	....
Sea Green	.39	.39	....
Mint Green	.39	.39	....
Champagne	.39	.39	....
Midnight Black	.39	....	.39
Gold	.39	.39	....

NO YARN TRAPPING WITH BRAZED ALUMINUM TWO POUND TAKE-UP BOBBIN



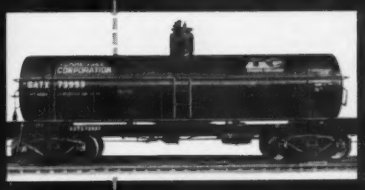
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ALLENTOWN PENNSYLVANIA

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Turquoise	.39	.39	....
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Charcoal Grey	.39	.39	....
Coco	.39	.39	....
Sable	.39	....	.39
Tangerine	.59	....	.59
Chinese Red	.59	....	.59
Larkspur Blue	.39	.39	....
Royal Blue	.59	....	.59
Lemon Peel	.48	.48	....
Kelly Green	.45	.45	....
Bitter Green	.59	....	.59
Brazil	....	.39	....
Redwood	....	....	.39
Frost Green	....	.39	....
Mist Grey	....	.39	....
Medium Brown	....	.39	....
Dark Brown	....	....	.39
Woodtone	....	.39	....
Antique Gold	....	.39	....
Light Turquoise	....	.39	....
Hunter Green	....	.39	....

Terms: Net 30 days. Prices are quoted f.o.b. shipping point, lowest cost of transportation allowed, or prepaid. To points West of the Mississippi, lowest cost of transportation allowed to the Mississippi River crossing.

"Zantrel Polynosic" Rayon

Effective August 14, 1959

Man-made, cellulosic staple.

Semi-Bright, 1 denier, 1 916/"	$.45 per lb.
1½ denier, 1¼" and 1 9/16"	.42 per lb.
3 denier, 1 9/16" and 2"	.42 per lb.

Terms: Net 30 days. Prices are quoted f.o.b. shipping point, lowest cost of transportation allowed, or prepaid. To points West of the Mississippi, lowest cost of transportation allowed to the Mississippi River crossing.

North American Rayon Corporation

Current Prices

Rayon Staple

Super High Tenacity	Bright
No. 1 (Unshrunk)	
1, 1.5 & 2.3 deniers	.40
No. 2 (Preshrunk)	
1, 1.5 & 3 deniers	.40

Rayon Tow

High Tenacity	
2200/960	.52
2200/2000	.525
4400/2000	.475
4400/2934	.475
6000/2934	.425

"Terms: Net 30 days, F.O.B. shipping point. Minimum freight allowed within the continental limits of the United States, excluding Alaska. Goods after shipment shall be at buyer's risk. Merchandise transported in seller's own trucks or those of its affiliates is sold F.O.B. delivery point. Prices are subject to change without notice."

TRIACETATE

Celanese Fibers Company

Current Prices Effective June 7, 1957

(Most Deniers Available in Bright or Dull Luster)

Arnel Staple and Tow

Arnel Triacetate Staple	Bright & Dull
2.5 Individual Denier	$.55
5.0 Individual Denier	.55
Arnel Triacetate Tow	
2.5 Individual Denier 114,000 Total Denier	$.60
5.0 Individual Denier 90,000 Total Denier or 180,000 Total Denier	.60

Packaged on Ball Warps

Terms: Net 30 days. Transportation prepaid or allowed to any destination in U.S.A. east of Mississippi River. Transportation prepaid to any U.S.A. destination west of Mississippi River, but charge is made for the portion of transportation from river crossing nearest customer's location.

Prices subject to change without notice.

All previous prices withdrawn.

Note: Prices on unlisted items can be obtained upon request.

Orders are subject to conditions of sale appearing on our acknowledgments of orders.

NON CELLULOSIC YARN

NYLON

Allied Chemical Corporation

Caprolan®

Current Yarn Prices: Effective May 1, 1960

Denier	Filament	Turn/In.	Twist	Type**	Package	1st Grade Price/Lb.
140	16	1½	Z	B	Cones*	$1.60
140	16	1½	Z	B	Beams	1.65
200	16	1½	Z	B	Cones*	1.49
200	16	1½	Z	B	Beams	1.54
200	32	¾	Z	B	Bobbins	1.49
200	32	¾	Z	B	Beams	1.54
210	32	1	Z	HB	Bobbins	1.49
260	16	1	Z	HB	Bobbins	1.49
420	64	½	Z	HBT	Bobbins	1.39
420	64	½	Z	HBT	Beams	1.44
520	32	1	Z	B	Bobbins	1.39
520	32	1	Z	B	Beams	1.44
840	136	½	Z	HBT	Al. Tubes	0.94
840	136	½	Z	HBT	Beams	0.92
1680	272	½	Z	HBT	Al. Tubes	0.94
1680	272	½	Z	HBT	Beams	0.92
1050	56	½	Z	B	Al. Tubes	1.15
2100	112	½	Z	B	Al. Tubes	1.11
4200	224	0	O	B	Paper Tubes*	1.10
2100	408	0	O	HB	Paper Tubes*	0.97
2500	408	0	O	HB	Paper Tubes*	0.97
3360	544	0	O	HB	Paper Tubes*	0.96
4200	680	0	O	HB	Paper Tubes*	0.96
5000	816	0	O	HB	Paper Tubes*	0.96
5800	952	0	O	HB	Paper Tubes*	0.96
7500	1224	0	O	HB	Paper Tubes*	0.95
10000	1632	0	O	HB	Paper Tubes*	0.95
15000	2448	0	O	HB	Paper Tubes*	0.95

Terms—Net 30 days.

Price subject to change without notice.

Bobbins are invoiced at 45¢ ea.

Aluminum Tubes are invoiced at 40¢ ea.

Beams are invoiced at $220.00.

Cradles for beams are invoiced at $53.00.

B—Bright
H—High Tenacity
T—Heat Stabilized

* Paper Tubes and Cones non-returnable, no charge.

** Type is used to describe luster and tenacity.

All prices quoted F.O.B. Shipping Point.

Minimum transportation charges allowed and prepaid in Continental United States, excluding Alaska.

American Enka Corporation

Enka Nylon Prices

Effective March 21, 1961

Denier/Mono Filament	Luster	Twist	Package	Price Per Pound Standard	Price Per Pound Substandard
15/1	SD or D	0.5Z	Pirns	3.89	3.69
15/1	SD or D	0.5Z	Spools	4.00	....
20/1	SD	0.5Z	Pirns	3.53	3.30
20/6	SD	0.5Z	Pirns	2.91	2.61
20/6	SD	0.5Z	Spools	3.02	....
20/6	Dull	0.5Z	Pirns	2.96	2.61
20/6	Dull	0.5Z	Spools	3.07	....
30/1	SD	0.5Z	Pirns	4.13	3.93
30/6	SD	0.5Z	Pirns	2.36	2.21
30/6	SD	0.5Z	Spools	2.46	....
40/8-13	SD	0.5Z	Pirns	2.01	1.91
40/8-13	SD	0.5Z	Spools	2.11	....
40/8	SD-B de B*	0.5Z	Pirns	2.10	2.00
40/13	Dull	0.5Z	Pirns	2.06	1.96
40/13	Dull	0.5Z	Spools	2.16	....
50/13	SD	0.5Z	Pirns	1.91	1.76
50/13	SD	0.5Z	Spools	2.01	....
50/13	SD-B de B*	0.5Z	Pirns	2.00	1.85
50/13	SD-B de B*	0.5Z	Spools	2.10	....
70/16-32	B or SD	0.5Z	Pirns	1.71	1.66
70/32	SD-B de B*	0.5Z	Pirns	1.80	1.75
100/32	SD	0.5Z	Pirns	1.65	1.60
100/32	SD-B de B*	0.5Z	Pirns	1.74	1.69
140/24	Bright	1.5Z	Cones	1.60	1.55
140/24	Bright	1.5Z	Beams	1.65	....
140/32-64	SD	0.5Z	Pirns	1.60	1.55
140/32-64	SD-B de B*	0.5Z	Pirns	1.69	1.64
200/16-32	Bright	0.5Z	Cones	1.49	1.44
200/16-32	Bright	0.5Z	Beams	1.54	....
200/16-32	Bright	1.5Z	Cones	1.49	1.44
200/16-32	Bright	1.5Z	Beams	1.54	....
200/32	SD-B de B*	0.5Z	Cones	1.58	1.53
200/16-32	Bright	0.5Z	Cones	1.49	1.39
400/64	Bright	0.5Z	Cones	1.39	1.29
520/32	Bright	0.5Z	Cones	1.39	1.29
1040/68 Enkatron**	SD	0.5Z	Cones	1.30	1.20
1230/68 Enkatron**	SD	0.5Z	Cones	1.30	1.20
840/140	BHT	0.5Z	Cones	.94	.92
840/140	BHT	0.5Z	Beams	.92	....

* Blanc de Blancs = Enka Trademark White of Whites.

** Enkatron = Enka Trademark Multilobal Yarns.

*Luster: B—Bright; H—High Tenacity; T—Heat Stabilized; SD—Semi-Dull; D—Dull; *SD-B de B.

Pirns invoiced at 25¢ or 45¢ each, depending on type. Deposits refunded upon return of pirns in good condition. Cones are not returnable. Spools, Beams and Racks are deposit carriers and remain the property of American Enka Corporation.

Terms: Net 30 days from date of invoice. Minimum common carrier transportation charges will be prepaid and absorbed to first destination in the continental limits of the United States excluding Alaska and Hawaii. In prepaying transportation charges, seller reserves the right to select carrier used.

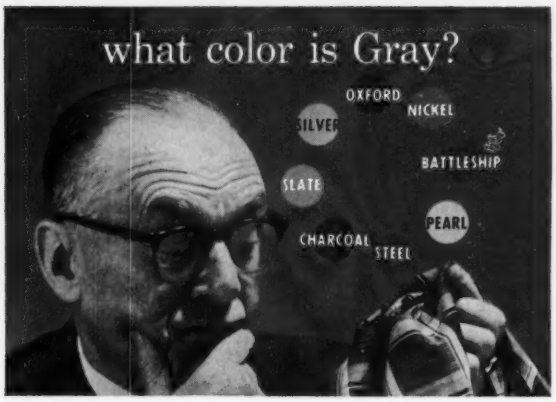
All prices subject to change without notice.

*B de B—Blanc de Blancs®—White of Whites Color.

The Chemstrand Corp.

Current Prices Effective January 1, 1960

	Denier	Filament	Twist	Type	Package	Standard Price/lb.	Second Price/lb.
	10	1	O	SD	Bobbins	$7.16	$6.56
*	15	1	O	RSD	Bobbins	3.89	3.69
	15	1	O	RSD	Spools	4.00	....
	15	1	O	Dull	Bobbins	3.89	3.69
	15	1	O	Dull	Spools	4.00	....
	20	7	Z	RSD	Bobbins	2.91	2.61
	20	7	Z	RSD	Spools	3.02	....
*	30	10	Z	RSD	Bobbins	2.36	2.21
*	30	26	Z	RSD	Bobbins	2.49	2.21
*	40	10	Z	RSD	Bobbins	2.01	1.91
*	40	13	Z	RSD	Bobbins	2.01	1.91
	40	13	Z	RSD	Spools	2.11	....
	40	13	O	RSD	Draw Wind	2.01	1.91
*	40	13	Z	Dull	Bobbins	2.06	1.96
	40	13	Z	Dull	Spools	2.16	....
	40	13	O	Dull	Draw Wind	2.06	1.96
*	50	17	Z	RSD	Bobbins	1.91	1.76
	50	17	O	RSD	Draw Wind	1.91	1.76
*	50	17	Z	Brt.	Bobbins	1.91	1.76
*	70	20	Z	RSD	Bobbins	1.71	1.66
*	70	34	Z	RSD & SD	Bobbins	1.71	1.66
	70	34	O	RSD & SD	Draw Wind	1.71	1.66
	70	34	Z	Brt.	Bobbins	1.71	1.66
	70	34	O	Brt.	Draw Wind	1.71	1.66
	70	34	Z	HB	Bobbins	1.76	1.66



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Atlantic
Yarn Corporation

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PLANT: 86 CRARY ST., PROVIDENCE, R. I.

Union Carbide's Nylon 7 Described

A special type of nylon which has superior qualities for tire cords, fish lines, and a wide variety of wearing apparel has been produced in the laboratory by a simple economical process, the American Chemical Society was told recently. Nylon 7, shelved since its accidental production in the laboratory many years ago, can at last be made by a commercially feasible process from a synthetic derivative of aminoheptanoic acid, according to Dr. C. F. Horn of Union Carbide Chemicals Company, South Charleston, W. Va.

When this derivative is boiled in water, it forms a white waxy-to-brittle substance that can be stored or spun immediately into strong fibers, thus eliminating several steps involved in commercial production of its chemical cousins, the familiar, nylon 6 and nylon 66, he said.

Its high softening temperature, 430 degrees F., makes it especially suitable for tire cords where heat buildup from friction is a problem. Nylon 7 does not degrade easily in presence of ultra violet light and produces tough, clear films and molded objects of good impact resistance, he told the Society's Division of Polymer Chemistry.

Eight intermediates for the preparation of nylon 7 were synthesized, according to the chemist, who continued: "These intermediates may be made to combine, or polymerize, initially by boiling with water, followed by heating at temperatures high enough to melt the intermediate compounds or 'prepolymers' formed. Thus, a simple process was worked out for converting one of the compounds, the ethyl ester, which is a compound of the amino acid ethyl alcohol, into a high melting, tough, white plastic".

Horn is a group leader in Carbide's research department. Coauthors of the report, which was presented in the Kiel Auditorium, were B. T. Freure, another group leader, and research chemists H. Vineyarn and H. J. Decker, all of Union Carbide.

Nylon Maker Seeks Engineers

Recruiting of chemical, textile, electrical and mechanical engineers to fill positions resulting from a major nylon expansion program is under way by Allied Chemical's National Aniline Division. The job openings are at Columbia, S. C., where a new fine denier nylon 6 plant is under construction, and at Hopewell and Chesterfield, Va., according to J. Warren Carey, Vice President, Manufacturing, National Aniline.

The multi-million dollar fine denier nylon plant at Columbia, S. C., is expected to be operative in August 1961 and will be the first of its kind in this country to produce nylon 6 yarn for the textile industry, Carey said. The erection of the South Carolina plant has necessitated an expansion of Allied's caprolactam monomer facilities at Hopewell, Va., where the starting material for Caprolan nylon is produced. Additional personnel will be required at Chesterfield, Va., where heavy nylon for tires and carpets is manufactured, Carey explained.

Experts in physics, instrumentation, statistics, quality control, chemical processing and polymerization are needed for positions in research and development, operations and maintenance.

For further information, write P. R. Dept. 46, Allied Chemical's National Aniline Division, 40 Rector Street, New York 6, N. Y.



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70	34	O	HB	Draw Wind	1.76	1.66
90	26	Z	RSD	Bobbins	1.76	1.66
100	26	Z	RSD	Bobbins	1.65	1.60
100	34	Z	RSD	Bobbins	1.65	1.60
100	34	Z	HB	Bobbins	1.70	1.60
140	68	Z	SD	Bobbins	1.60	1.55
140	68	Z	Brt.	Bobbins	1.60	1.55
* 200	34	Z	Brt.	Bobbins	1.49	1.44
200	34	O	Brt.	Draw Wind	1.49	1.44
200	34	Z	Brt.	Spools	1.54	....
* 200	68	Z	RSD	Bobbins	1.56	1.46
210	34	Z	HB	Bobbins	1.49	1.44
210	34	O	HB	Draw Wind	1.49	1.44
210	34	Z	HB	Spools	1.54	....
210	34	Z	HB	Beams	1.54	....
210	34	Z	RHB	Bobbins	1.49	1.44
260	17	Z	HB	Bobbins	1.49	1.39
260	17	Z	HB	Beams	1.54	....
420	68	Z	HB	Bobbins	1.39	1.29
520	34	Z	HB	Bobbins	1.39	1.29
780	51	Z	HB	Tubes	1.39	1.29
840	140	Z	HB	Tubes	.94	.92
840	140	Z	HB	Beams	.92	.90
840	140	Z	HB	Cones	.95	.93
840	140	Z	RHB	Tubes	.94	.92
840	140	Z	RHB	Beams	.92	.90
840	140	Z	RHB	Cones	.95	.93
840	140	Z	HB	Paper Tubes	.94	.92
840	140	Z	RHB	Paper Tubes	.94	.92
840	140	Z	RHB	Textile Grade—W.W.	1.06	.92
840	140	Z	HB & RHB	Raschel Spools	1.00	....
1680	280	Z	RHB	Tubes	.94	.90
1680	280	Z	RHB	Beams	.92	....
1680	280	Z	RHB	Cones	.95	.91

Cumuloft®

520	34	Z	RB	Tubes	2.05	....
1040	68	Z	RB	Tubes	1.74	....
1230	68	Z	RSD	Paper Tubes	1.53	....
2080	136	Z	RB	Tubes	1.66	....
3690	204	S	RSD	Cones	1.47	....

Cadon™

15	1	O	Brt.	Bobbins	4.90	4.70
15	1	O	Brt.	Spools	5.01	....
70	34	Z	RSD	Bobbins	1.81	....
200	34	Z	RB	Bobbins	1.54	....
520	34	Z	RB	Bobbins	1.44	1.34
1040	68	Z	RB & RSD	Tubes	1.30	1.20
1230	68	Z	RSD	Tubes	1.30	1.20
2080	136	Z	RB	Tubes	1.26	....

* These counts also available in Warp Wind package at price shown for Bobbins.

* *Types*: D—Dull; SD—Semi-dull; B—Bright; H—High tenacity.

Bobbins are invoiced at 25¢ or 45¢, depending on type; tubes are invoiced at 40¢ each; spools invoiced at $95.00, $110.00, and $115.00, depending on type; and beams and crates for beams are invoiced at $220.00 and $25.00 respectively.

Prices subject to changes without notice.

Freight prepaid within Continental United States and Puerto Rico.

E. I. du Pont de Nemours & Co.

Textile Fibers Dept.

Current Prices

Nylon Yarn

Denier & Filament	Turns/Inch & Twist	Type	Package	1st Grade	2nd Grade
7-1	0	200	Bobbin	$8.05	$7.40
10-1	0	200	Bobbin	7.16	6.56
12-1	0	200	Bobbin	6.35	5.85
15-1	0	90	Bobbin	4.90	....
15-1	0	90	Beams	5.01	....
15-1	0	200	Beam	4.00	....
15-1	0	200/280	Bobbin	3.89	3.69
15-1	0	680	Beam	4.00	....
15-1	0	680	Bobbin	3.89	3.69
30-1	0	....	Bobbin	4.13	....
20-1	0	200/280	Bobbin	4.03	3.68
14-2	0.2Z	200	Bobbin	6.72	6.12
17-2	0.2Z	200	Bobbin	5.96	5.41
20-2	0.2Z	200	Bobbin	4.71	4.27
15-3	0.2Z	200	Bobbin	5.19	4.69
21-3	0.2Z	200	Bobbin	4.70	4.27
20-7	0.5Z	200	Bobbin	2.91	2.61
20-7	0.5Z	200	Beam	3.02	....
20-7	0.5Z	680	Bobbin	2.96	2.61
20-7	0.5Z	680	Beam	3.07	....
20-20	0.7Z	209	Bobbin	6.00	....
28-4	0.2Z	200	Bobbin	2.81	2.61
30-10	0.5Z	200	Bobbin	2.36	2.21
30-10	0.5Z	200	Tricot Bms.	2.46	....
30-10	0.5Z	300	Bobbin	2.51	2.36
30-10	0.5Z	680	Bobbin	2.41	2.21
30-10	0.5Z	680	Tricot Bms.	2.51	....
30-26	0.5Z	200/280	Bobbin	2.49	2.21
30-26	0.5Z	200/280	Tricot Beams	2.59	....
40-7	0.5Z	200	Bobbin	2.11	1.91
40-10	0.5Z	200/280	Bobbin	2.01	1.91
40-10	0.5Z	200	Tricot Beams	2.11	....
40-13	0.5Z	200	Bobbin	2.01	1.91
40-13	0.5Z	200	Tricot Bms.	2.11	....
40-13	0.5Z	400	Bobbin	2.13	1.90
40-13	0.5Z	680	Bobbin	2.06	1.96
40-13	0.5Z	680	Tricot Bms.	2.16	....
40-34	0.5Z	200	Bobbin	2.21	1.81
50-10	0.5Z	200	Bobbins	2.11	1.76
50-17	0.5Z	100/200	Bobbin	1.91	1.76
50-17	0	200	Tubes	1.91	1.76
50-17	0.5Z	680	Bobbin	2.01	1.76
60-34	0.5Z	300	Bobbin	1.86	1.76
60-20	0.5Z	200/280/288	Bobbin	1.82	1.65
70-17	0.5Z	200/288	Bobbin	1.71	1.66
70-34	0	100	Tubes	1.71	1.66
70-34	0.5Z	100/200/180	Bobbin	1.71	1.66
70-34	0	105/205	Paper Tube	1.71	1.66
70-34	0	200/285	Tubes	1.71	1.66
70-34	0.5Z	280	Bobbin	1.71	1.66
70-34	0.5Z	288	Bobbin	1.71	1.66
70-34	0.5Z	300	Bobbin	1.76	1.66
70-34	0.5Z	680	Bobbin	1.76	1.66
70-34	0	680	Tubes	1.76	1.66
80-26	0.5Z	200	Bobbin	1.71	1.60
90-26	0.5Z	200/288	Bobbin	1.76	1.66
100-34	0.5Z	200/288	Bobbin	1.65	1.60
100-34	0.5Z	300	Bobbin	1.70	1.60
100-34	0	300	Tubes	1.70	1.60
100-34	0.5Z	680	Bobbin	1.70	1.60
100-50	0.5Z	200/288	Bobbin	1.71	1.60
110-50	0.5Z	200	Bobbin	1.71	1.60
140-68	0.5Z	100	Bobbins	1.60	1.55
140-68	0	200	Tubes	1.60	1.55
140-68	0.5Z	200/288	Bobbin	1.60	1.55
140-68	0.5Z	300	Bobbin	1.65	1.55
200-20	1Z	100	Bobbin	1.49	1.44
200-34	0	100	Tubes	1.49	1.44
200-34	0.7Z	100	Bobbin	1.49	1.44
200-34	0	105	Tube	1.49	1.44
200-34	0.7Z	680	Bobbin	1.54	1.44
200-68	0.7Z	100/200	Bobbin	1.56	1.46
210-34	0	300	Tubes	1.49	1.44
210-34	0.7Z	300	Bobbin	1.49	1.44
210-34	0.7Z	300	Beam	1.54	....
210-34	0	305	Tube	1.49	1.44
210-34	0.7Z	330	Bobbin	1.49	1.44
260-17	1Z	300/380	Bobbin	1.49	1.39
400-68	0.7Z	100	Bobbin	1.39	1.29
420-68	1Z	300	Bobbin	1.39	1.29
420-68	1Z	300	Beams	1.44	....
520-34	1Z	300/380	Bobbin	1.39	1.29
630-102	0.7Z	300	Bobbin	1.39	1.29
780-51	1Z	300/380	Bobbin	1.39	1.29
800-140	0.5Z	100	Bobbin	1.39	1.29

Nylon Filament "Antron"* Yarn Prices

20-7	0.5Z	560 Brt.	Bobbin	3.06	2.76
20-7	0.5Z	560 S.D.	Bobbin	3.06	2.76
30-10	0.5Z	560 S.D.	Bobbin	2.46	2.31
40-13	0.5Z	560 Dull	Bobbin	2.16	2.06
40-13	0.5Z	560 S.D.	Bobbin	2.11	2.01
50-17	0.5Z	560 S.D.	Bobbin	2.01	1.86
70-34	0	565 S.D.	Paper Tube	1.81	1.76
70-34	0.5Z	560 S.D.	Bobbin	1.81	1.76
70-34	0	560 S.D.	DW Tube	1.81	1.76
200-20	0.7Z	560 Brt.	Bobbin	1.54	1.49
200-34	0.7Z	560 S.D.	Bobbin	1.54	1.49
200-34	0	565 S.D.	Paper Tube	1.54	1.49
520-34	1Z	560 Brt.	Bobbin	1.44	1.34
780-51	1Z	560 Brt.	Bobbin	1.44	1.34

* Antron is DuPont's registered trademark for its trilobal multi-filament nylon yarn.

Color-Sealed Black Yarn

Denier & Filament	Turns/Inch & Twist	Type	Package	1st Grade	2nd Grade
30-10	0.5Z	140	Bobbin	$2.71	$2.56
40-13	0.5Z	140	Bobbin	2.36	2.16
70-34	0.5Z	140	Bobbin	2.06	2.01
100-34	0.5Z	140	Bobbin	2.00	1.95
200-20	0.7Z	140	Bobbin	1.84	1.79
200-34	0.7Z	140	Bobbin	1.84	1.79
260-20	1Z	140	Bobbin	1.84	1.79

INDUSTRIAL YARNS

Tire Quality

Denier & Filament	Turns/Inch & Twist	Type	Package	1st Grade	2nd Grade
840-140	0.5Z	300/700	Aluminum Tube	$.94	$.92
840-140	0.5Z	300/700	Beam	.92	....
840-140	0.5Z	300/700	Raschel Beam	1.00	....
1680-280	0.5Z	700	Cone, Paper Tube	.95	.92
1260-210	0.5Z	700	Beam	.92	....
1680-280	0.5Z	700	Aluminum Tube	.94	.92
1680-280	0.5Z	700	Beam	.92	....
840-140	0.5Z	300/700	Cone, Paper Tube	.95	.92

Industrial Quality

840-140	0.5Z	707	Cone, Pape Tube	.95
2520-420	0	700	Paper Tube	.97
3360-560	0	700	Paper Tube	.96
5040-840	0	707	Paper Tube	.99
5040-840	0	700	Paper Tube	.96
7560-1260	0	707	Paper Tube	.98
7560-1260	0	700	Paper Tube	.95
10080-1680	0	707	Paper Tube	.98
15120-2520	0	707	Paper Tube	.98

These prices are subject to change without notice. Terms: Net 30 Days.

Types

Type 90—Bright, normal tenacity, trilobal—cross section.
Type 100—Bright, normal tenacity.
Type 105—Bright, normal tenacity, low shrinkage (5-7%)
Type 140—Bright, color-sealed, black, normal tenacity.
Type 200—Semidull, normal tenacity.
Type 205—Semidull, normal tenacity, low shrinkage (5-7%)
Type 209—Semidull, normal tenacity, improved light durability and dye light fastness.
Type 280—Semidull, normal tenacity, improved light durability and dye light fastness.
Type 285—Semidull, normal tenacity, low shrinkage, improved light durability, and dye light fastness.
Type 288—Semidull, normal tenacity, for Texturing.
Type 300—Bright, high tenacity.
Type 305—Bright, high tenacity, low shrinkage (5-7%)
Type 330—Bright, high tenacity, more heat & light resistant.
Type 380—Bright high tenacity, improved light durability and dye light fastness.
Type 400—Semidull, high tenacity.
Type 560—Luster as designated—Modified cross section. Improved light durability and dye light fastness.
Type 565—Luster as designated—Modified cross section, low shrinkage. Improved light durability and dye light fastness.
Type 680—Dull, normal tenacity.
Type 700—Bright, high tenacity.
Type 707—Bright, high tenacity cordage yarn.

Freight Terms—Terms are F.O.B. shipping point, freight prepaid our route within the continental limits of the United States, excluding Alaska.

Following are invoiced as a separate item.

Bobbins—25 cents or 45 cents depending on type

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☐ Hydrosol—cresylic acid scouring and kier assistants. Especially good for use on wool and cotton.
☐ Mercerizing Penetrants—a series of cresylic acid type penetrants for use with all strengths of caustic soda up to 80° TW. Non-cresylic types are also available.
☐ Laurel Transfer Removers—a line of products for all types of transfers to be applied by either wet or dry processing.
☐ Boil-Off Compounds—Boil-off oils, Triconate boil-off powders, Supersulfate neutral boil-off powders.
☐ Amine Condensates—straight and compounded to suit your requirements.
☐ Alkyl Aryl Sulfonates—Liquid, paste, and powder. Neutral or built for all purposes. Amine or sodium salts available.
☐ Sulfated Esters—for wetting, dyeing, rewetting. Preshrinking assistant.
☐ Lauramine 20—superior packaged dyed yarn lubricant and softener. Does not yellow whites or alter shades.
☐ Lauramine 20A—A liquid form of Lauramine 20. Predispersed for simplified use.
☐ Catamine SF—excellent cationic softener for natural and synthetic fibers. Especially dispersed. Particularly effective on Orion and wool knitted fabrics.
☐ Sulfonated Oils—tallow, castor, olive, neatsfoot. Available straight or compounded for special finishing problems.
☐ Flame Retardants—a series of renewable type products to cover all requirements on cotton fabrics.
☐ Water Repellents—renewable type.
☐ Sizes—Resin and gelatine sizing and finishing compounds for all fibers and fabrics.
☐ Hydrocop & 3B Softener—Wax Emulsion WG, Wax Emulsion R, Ruxite A—for softening, conditioning, and lubricating all natural and spun synthetic yarns for knitting.
☐ Coning Oils—for all synthetic yarns—filament and spun.
☐ Hosiery Finishes—a complete line of resin hosiery finishes.
☐ Dullers, Weighters and Conditioners—a full line to meet your requirements.
☐ Antifoams—quick, easy-to-use. Readily dispersed; stable.
☐ Antistatic Compounds—non permanent types for all fibers.

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Aluminum Tube—40¢ each
Draw Winder Tubes—$1.00
Industrial & Section Beams—$220.00 each
Racks for Industrial & Section Beams—$50.00 each
Tricot Beams—$95.00 or $250.00 each depending upon type
Racks for Tricot Beams—$70.00 or $130.00 each depending upon type
Raschel Beams—$85.00 or $100.00 each depending upon type
Racks for Raschel Beams—$70.00 each

Tricot and Raschel Beams are billed at the above prices if not returned within 90 days from date of invoice.

Section Beams are billed after 60 days, and Industrial Beams are billed after 60 days.

(Beams and Racks are deposit carriers and remain the property of E. I. du Pont de Nemours & Co., Inc.)

POLYESTER

E. I. du Pont de Nemours & Co.

Textile Fibers Dept.

Current Prices

"Dacron"*

Denier & Filament	Turns/Inch	Luster	Type*	Package	Tubes 1st Gr.
30-14	0	Bright	55	Tube	$2.60
30-20	0	Semidull	56	Tube	2.60
40-27	0	Semidull	56	Tube	2.35
40-27	0	Bright	55	Tube	2.35
40-27	0	Dull	57	Tube	2.40
70-34	0	Semidull	56	Tube	1.97
70-14	0	Bright	55	Tube	1.97
70-34	0	Bright	55	Tube	1.97
70-34	0	Dull	57	Tube	2.02
100-34	0	Semidull	56	Tube	1.90
140-28	0	Bright	55	Tube	1.85
150-34	0	Semidull	56	Tube	1.85
220-50	0	Bright	51	Tube	1.76
250-50	0	Bright	55	Tube	1.76
1100-250	0	Bright	51	Core	1.50
1100-250	0	Bright	52	Core	1.50
1100-250	Ro2	Bright	52	Core	1.50
1100-250	Ro2	Bright	52	Beam	1.50

Terms: Net 30 days.

Domestic Freight Terms are F.O.B. shipping point, freight prepaid our route within the Continental limits of the U. S., excluding Alaska.

Yarn Types

* Type:
Type 51—Bright, high tenacity.
Type 52—Bright, high tenacity.
Type 55—Bright, normal tenacity.
Type 56—Semidull, normal tenacity.
Type 57—Dull, normal tenacity.

Tubes are invoiced as a separate item at $.70 each.

Industrial beams and cradles are billed if not returned within 60 days from date of invoice. They are then billed as separate items at $220.00 per beam and $50.00 per cradle and are returnable for credit.

*"DACRON" is DuPont's registered trade-mark for its polyester fiber.

SARAN

The National Plastics Products Company—Fibers Division Odenton, Maryland

Current Prices:

CONTINUOUS FILAMENT

Type	Twist p. i.	Natural	Colors
750/20*	3	1.75	1.80

* For filter fabrics and other industrial purposes only.

F.O.B. Odenton, Maryland.

Terms: Net 30 days.

NON CELLULOSIC STAPLE & TOW ACRYLIC

American Cyanamid Co. Fibers Division

Effective Date: December 21, 1960

Cyanamid Acrylic Staple

	1st Grade Price (per pound)
2.0 Denier Bright and Semi-Dull	$1.28
3.0 Denier Bright and Semi-Dull	1.22
5.0 Denier Bright and Semi-Dull	1.22
15.0 Denier Bright and Semi-Dull	.95

Staple Lengths: 1½", 2" 2½", 3", 3½", 4", 4½".

Type WM—Designed for the woolen spinning system and is a blend of deniers (average 4) and length .94

Type BC—Designed for blending with cellulosics and is 2 or 3 denier 1½" semi-dull regular staple 1.08

Information provided on request for Deniers, Lengths and Lusters not listed above.

Prices are subject to change without notice.

Terms: Net 30 Days.

F.O.B. Shipping Point—Minimum transportation allowed (Seller's route and method) within the continental limits of the United States excluding Alaska. If Buyer requests and Seller agrees to a route or method involving higher than minimum rate, Buyer shall pay the excess transportation cost.

Note: CRESLAN® is Cyanamid's registered trademark for certain of its acrylic fibers. Use of this trademark is authorized only on properly constructed fabrics, after they have been tested and approved by Cyanamid.

The Chemstrand Corp.

"Acrilan"*

Current Prices Effective January 1, 1961

Denier	Type	Regular Acrilan "A" Qual.	Regular Acrilan 2nd Qual.	Acrilan 16 "A" Qual.	Acrilan 16 2nd Qual.
1.0	Staple	$	$	$1.28	$ ....
2.0	Staple	1.22	1.03	1.22	1.03
2.0	Tow	1.22	1.03	1.22	1.03
2.5	Hi-Bulk Staple	1.22	1.03	1.22	1.03
2.5	Hi-Bulk Tow	1.22	1.03	1.22	1.03
3.0	Staple	1.22	1.03	1.22	1.03
3.0	Tow	1.22	1.03	1.22	1.03
5.0	Staple	1.22	1.03	1.22	1.03
5.0	Tow	1.22	1.03	1.22	1.03
8.0	Staple	1.18	1.03	1.18	1.03
8.0	Tow	1.18	1.03	1.18	1.03
15.0	Staple	.95	....	.95	....
15.0	Tow	.95	....	.95	....

Staple and Tow available in Bright and Semi-Dull lusters.

Acrilan Spectran™

		Dark	Light
2.5	Staple	1.39	1.29
3.0	Staple	1.39	1.29
3.0	Tow	1.44	1.34

Acrilan Spectran—Staple and Tow available in Bright lusters only.
Dark—Black, Dark Blue, Brown, Dark Grey and Olive.
Light—Taupe, Gold, Beige and Light Grey.

Fiberfill	....	....	1.01	....
Types 77, 88 and 89 Staple	....	....	.97	....

TERMS: Net 30 Days.

F.O.B. shipping point, freight prepaid: seller to select and pay transportation charges of carrier to points within the continental limits of the United States, excluding Alaska.

* "Acrilan" is Chemstrand's registered trademark for its acrylic fiber.

The Dow Chemical Company

Textile Fibers Department Current Prices

"Zefran"* Acrylic Staple

2.0 denier Semidull & Bright—Staple only	$1.28
3.0 denier Semidull & Bright—Staple only	1.28
6.0 denier Semidull & Bright—Staple only	1.18
100% Blends of ZEFRAN acrylic fiber (For the Woolen System)	
Type W-2 (average denier of about 2.5)	$.99
Type W-4 (average denier of about 4.5)	.94

Terms: Net 30 days.

Transportation Terms: F.O.B. shipping point—Freight prepaid our route within the continental limits of the U. S., excluding Alaska.

* Registered trademark of The Dow Chemical Co.

E. I. du Pont de Nemours & Co.

Textile Fibers Dept. Current Prices

"Orlon"* Acrylic Staple & Tow

Type 42	Staple Length	Tow Blds.	1st Grade
2.0 Denier Semidull & Bright	1¼, 1½, 2, 2½, 3, 4½	470M	1.28
3.0 Denier Semidull & Bright	1¼, 1½, 2, 2½, 3, 4½	470M	1.30
3.0 Denier Color-sealed Black	1¼, 1½, 2, 2½, 3, 4½	470M	1.63
6.0 Denier Semidull & Bright	1½, 2, 2½, 3, 4½	470M	1.20
6.0 Denier Color-sealed Black	1½, 2, 2½, 3, 4½	470M	1.55
4.5 Denier Semidull	1½, 2, 2½, 3, 4½	470M	1.18
10.0 Denier Semidull & Bright	1½, 2, 2½, 3, 4½	470M	1.18
10.0 Denier Color-sealed Black	1½, 2, 2½, 3, 4½	470M	1.55

High Shrinkage Staple price as Regular Staple

Type 38 Semidull & Bright $1.09

This product is designed for the pile-fabric trade and is a mixture of deniers (average about 3.0), 1¼" staple.

Type 39 Semidull $.94

This product is designed for *woolen system spinning* and is a blend of deniers (average 4.2) with a variable cut length.

Type 39A Semidull $.99

This product is designed for *woolen system spinning* and is a blend of predominately fine deniers (average 2.5) with a variable cut length.

Type 39B Semidull $.94

This product is designed for *woolen system spinning* and is a blend of predominately heavy deniers (average 6.5) with a variable cut length.

Type 72 Semidull $1.08

This product is designed as a blending staple with cotton for skin-contact apparel type of fabrics and is a 1.5 denier, 1½" semidull whitened staple.

Type 75 Semidull $1.08

This product is designed for *Cotton/Rayon System* Spinning and is 2.5 denier, 1½" semidull regular shrinkage staple.

"ORLON SAYELLE"**

Type 21

3.0 denier semidull variable (2½" to 5" average 3¾") staple	$1.45
6.0 denier semidull variable (2½" to 5" average 3¾") staple 4% M	1.40
6.0 denier semidull tow 470M	1.40

F.O.B. Shipping Point—Freight prepaid our route within the continental limits of the United States, excluding Alaska.

*"ORLON" is Dupont's Registered Trade-mark for its Acrylic Fiber.

"ORLON SAYELLE"** is Dupont's Registered Trade-mark for its bi-component Acrylic fiber.

MODACRYLIC

Eastman Chemical Products, Inc. Tennessee Eastman Co.

Current

"Verel"* Staple and Tow

All items available in both bright and dull luster in standard lengths

Denier	Type A	Type B	Type C	Type D	Type HB	Type F	Type III
2	$1.02	....	....	....	....	....	....
2.75	....	....	....	....	....	$0.92	....
3	1.02	....	....	....	$1.02	0.92	$1.02
5	....	$0.92	....	....	0.92	....	....
8	....	0.92	....	....	0.92	....	....
12	....	0.85	$0.85	....	....	....	....
16	0.88	....	0.88	$0.88	0.88	....	....
24	....	....	0.93	....	....	....	....

Type A—High crimp with good crimp retention
Type B—High crimp—less permanent than Type A
Type C—Medium crimp—nonpermanent—crimp easily removed
Type D—Low crimp—completely nonpermanent—fiber must be stabilized in dyeing
Type HB—Very high, very permanent crimp
Type F—Fiber with greater denier and length variation than other types
Type III—Controlled shrinkage fiber

Prices are subject to change without notice.

Terms: Net 30 days. Payment—U. S. A. dollars.

Transportation charges prepaid or allowed to destination in continental United States, except Alaska. Seller reserves right to select

route and method of shipment. If Buyer requests and Seller agrees to a route or method involving higher than lowest rate Buyer shall pay the excess of transportation cost and tax.

• "Verel" is a trade-mark of the Eastman Kodak Co.

Union Carbide Chemicals Co.

Div. Union Carbide Corp.

Textile Fibers Dept. Effective December 1, 1959

Dynel Staple & Tow

Natural Dynel	
2, 3, 6, 12 Denier, Staple and Tow	1.10 per lb.
Liner blend, Staple only	.92 per lb.
24 Denier, Staple and Tow	1.05 per lb.
12 Denier, Type 80, Staple and Tow	.85 per lb.
3 Denier Type 63, High Shrinkage, Staple and Tow	1.15 per lb.
Dynel Spun with Colors:	
Blond, Pewter, Gray, Brown, Charcoal, Black	
3 and 6 Denier, Staple and Tow	1.20 per lb.
3 Denier Type 63, High Shrinkage, Staple and Tow	1.30 per lb.

Prices are quoted F.O.B. shipping point, freight prepaid our route, within continental limits United States, excluding Alaska and Hawaii.

NYLON

E. I. du Pont de Nemours & Co.

Textile Fibers Dept. Current Prices

Nylon Staple and Tow

Denier	Type	Staple Lengths	Tow Bundle	1st. Grade Price/Lb.	2nd Grade Staple Only
1.5	200	1⅛"—4½"	None made	$1.24	$1.10
1.5	201	1⅛"—4½"	None made	1.26	1.12
2.3	420	1½" only	None made	1.24	1.10
3.0	231	1⅛"—4½"	385M	1.26	1.12
3.0	100/200	1⅛"—4½"	430M	1.24	1.10
3.0	101/201	1⅛"—4½"	455M	1.26	1.12
4.6	320	1"—6½"	None made	1.25	1.10
6.0	100	1½"—6½"	330M	1.20	1.06
6.0	101	1½"—6½"	345M	1.22	1.08
15.0	100	1½"—6½"	425M	.95	....
15.0	101	1½"—6½"	None made	.97	....
15.0	600	1½"—6½"	425M	.97	....
15.0	601	1½"—6½"	None made	.99	....

Staple lengths are restricted to the range shown opposite each denier above. The actual cut lengths within these ranges are as follows: 1⅛, 1½, 2, 2½, 3, 4½ and 6½

Types

Type 100 Bright, normal tenacity, not heatset.
Type 101 Bright, normal tenacity, heatset.
Type 200 Semidull, normal tenacity, not heatset.
Type 201 Semidull, normal tenacity, heatset
Type 231 Semidull, normal tenacity, high crimp, heatset.
Type 320 Semidull, high tenacity, high modulus, no crimp.
Type 420 Semidull, high tenacity, high modulus, no crimp.
Type 600 Dull normal tenacity, not heatset.
Type 601 Dull normal tenacity, heatset.
These prices are subject to changes without notice.
Terms—Net 30 Days.
Freight Terms—Terms are F.O.B. shipping point, freight prepaid our route within the continental limits of the United States, excluding Alaska.

NYTRIL

Celanese Fibers Company

DARVAN

Effective Nov. 21, 1958

Type	Price Per Pound Net Crimp Set	Crimp Set
3, 4½ and 6 Denier	$1.45	$1.50
1½, 2 Denier	$1.50	$1.55

Pack in 100 Lb. and 500 Lb. Bales, Net
Staple lengths 1½, 2, 3, 4½
Tow—90,000 Total Denier
Bright, Semi-dull, Dull

(Deniers and lengths of staple not listed above are available upon special request.) Terms: Net 30 Days.

F.O.B. Shipping Point (Avon Lake, Ohio) Minimum freight prepaid our route to points east of the Mississippi River within the continental limits of the United States, for points west of the Mississippi River freight allowed to the Mississippi River crossing nearest purchaser's mill if overland, or port of exit of purchaser's choice east of the Mississippi River.

OLEFIN

Beaunit Mills Inc.

Fibers Division Effective November 1, 1960

Polypropylene Bright Staple

Denier	Price per lb.
1.5	$.90
3.0	.90
6.0	.90
15.0	.90

Staple cuts are 1½", 2" and 3".
Other lengths are available on request.

Terms: Net 30 days F.O.B. shipping point. Minimum Freight allowed within the continental limits of the United States, excluding Alaska. Goods after shipment shall be at buyer's risk. Merchandise transported in seller's own trucks or those of its affiliates is sold F.O.B. delivery point. Prices subject to change without further notice.

POLYESTER

Beaunit Mills Inc.

Current Prices Vycron Polyester

	Denier	Price Per Lb.
	1.5	$1.00
	3.0	1.00
Staple Cuts are 1⅛" to 6".		
Tow for Converters	1.5	1.00
(Tow Bundle 200,000 Denier)	3.0	1.00

Spun Dyed Black 15¢ per lb. extra.

"Terms: Net 30 days, F.O.B. shipping point. Minimum freight allowed within the continental limits of the United States, excluding Alaska. Goods after shipment shall be at buyer's risk. Merchandise transported in seller's own trucks or those of its affiliates is sold F.O.B. delivery point. Prices are subject to change without notice."

E. I. du Pont de Nemours & Co.

Textile Fibers Dept. Current Prices

"Dacron"** Staple and Tow

Denier	Luster	Type*	Length	Tow Bundle	1st Gr.
1.5	Semidull	35	1¼"-1½"	None made	1.14
1.5	Semidull	54	1¼"-4½"	None made	1.14
1.5	Semidull	64	1¼"-3"	None made	1.24
2.25	Semidull	64	1¼"-4½"	450M	1.24
3.0	Semidull	54	1¼"-4½"	450M	1.24
3.0	Semidull	61	1¼"-4½"	None made	1.24
3.0	Semidull	64	1¼"-4½"	450M	1.24
4.0	Semidull	64	1¼"-4½"	450M	1.24
4.5	Semidull	54	1½"-4½"	450M	1.24
6.0	Semidull	54	1½"-4½"	450M	1.24
6.0	Semidull	61	1½"-4½"	None made	1.24
6.0	Semidull	64	1½"-4½"	450M	1.24

• Type:
Type 35—More Pill Resistant Staple for Cellulosic Bends.
Type 54—Semidull, Normal Tenacity.
Type 61—Industrial Staple having 45% Shrinkage. Not intended for Dyeable Uses.
Type 64—More Pill Resistant Staple, with Greater Dyeing Versatility.

"Dacron" Polyester Color-Sealed Black Staple and Tow

2.25	Color Sealed Black	64	1½"-4½"	450M	1.44
3.0	Color Sealed Black	64	1¼"-4½"	450M	1.44

F. O. B. Shipping Point—Freight prepaid our route within the continental limits of the United States, excluding Alaska.

•• Dupont's Registered Trade-mark for its Polyester Fiber.

Eastman Chemical Products, Inc.

Tennessee Eastman Co. Current

"Kodel"*

Deniers	Semi-Dull Staple	Tow	Staple and Tow Black	Brown	Blue
1.5	$1.33	$1.41	....	....	....
2.25	1.41	1.41	$1.76	....	....
3.0	1.41	1.41	1.76	$1.86	$1.96
4.5	1.36	1.36	....	....	....

Terms: Net 30 days. Payment—U. S. A. dollars.

Transportation charges prepaid or allowed to destination in continental United States, except Alaska. Seller reserves right to select route and method of shipment. If Buyer requests and Seller agrees to a route or method involving higher than lowest rate Buyer shall pay the excess of transportation cost and tax.

• "Kodel" is a trade-mark of the Eastman Kodak Company.

Celanese Fibers Company

Current Prices Effective June 10, 1960

Fortrel Polyester Staple and Tow

Staple

Denier	Luster	Price
1.5	Semi-dull	1.14
3	Semi-dull	1.24
4.5	Semi-dull	1.24
6	Semi-dull	1.24

Staple lengths 1½", 2" and 3".
All staple packaged in 500 pound bales.

Tow

Denier	Luster	Price
3	Semi-dull	1.24
4.5	Semi-dull	1.24
6	Semi-dull	1.24

Total denier of all tow is 225,000.
All tow packaged in 300 to 400 pound cartons.
TERMS: Net 30 days. F.O.B. destination—Freight prepaid our route within the continental limits of the United States, excluding Alaska. Prices subject to change without notice.

VINYON

American Viscose Corp. Effective October 1, 1956

Avisco Vinyon Staple

1.5 denier 1½" Unopened	$.90 per lb.
3.0 denier ½" Unopened	.80 per lb.
3.0 denier 1¼" Unopened	.80 per lb.
3.0 denier 1¼" Opened	.90 per lb.
3.0 denier 2" Opened	.90 per lb.
5.5 denier 1" Opened	.90 per lb.
5.5 denier 1½" Unopened	.80 per lb.

Terms: Net 30 days.

SARAN

The National Plastics Products Company—Fibers Division Odenton, Maryland

Current Prices: Saran Staple

Type	Denier	Natural	Colors
2Y—Upholstery	22	$0.70	$0.75
2Y—Upholstery	16	.74	.79
3Q—Industrial Fabrics	22	.68	.72
1C—Carpets	22	.68	.72
1M—Mops	22	.68	.72

In any staple length 1¼ to 6". Also 45 denier, 7" cut.
F.O.B. Odenton, Maryland.
Terms: net 30 days.

GLASS YARN

Owens Corning Fiberglas Corp.

A Decorative Continuous Yarn

DE 150 1/0 1.0 TPI ..... 53¢ per lb.
F.O.B. Freight Allowed.

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Globe Dye Works Co.

Fred G. Gronemeyer has been promoted to the new position of vice president and executive director, Industrial Development, of The Chemstrand Corp. **Warren P. McHugh** has been appointed technical service representative, Consumer Products and Industrial Marketing Development.



M. B. Friedman

Martin B. Friedman has been appointed manager, merchandising department of the Fibers Division of American Cyanamid Co.

Winn W. Chase has retired as head of overseas activities, market research and advertising programs of Interchemical Corp.'s Color & Chemicals Division. **Bert Bresky** has been appointed export manager and **Otto Agricola** named advertising manager.



Wm. H. Kieffer

William H. Kieffer has been named director of marketing, Fibers Division, American Cyanamid Co.

V. A. Romito has been appointed director of operations-fibers for Allied Chemical's National Aniline Division. **Robert G. Lautensack** was named manager of the division's Columbia, S. C., plant.

Robert A. Raidt has been appointed fibers advertising manager of Eastman Chemical Products, Inc. **C. R. Lee** was named head of the Buffalo sales office of the company's Chemicals Division and **Ted K. Bailey** has been assigned to the Chicago area sales force.

Business Service Section

Exclusively for Business, Laboratory and Mill Services; Positions and Men Wanted; Business Opportunities; Mill Properties Wanted or For Sale; Reconditioned Machinery and Equipment, etc.

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For Man-Made Fiber Industry

SENIOR ENGINEER

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For Polyester Fiber Plant

Experienced Engineers and Chemists.
Annual salary: Juniors $12,000 to $15,000 and Seniors: $15,000 to $20,000.
Must be willing to relocate.

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BERTNER YARN COMPANY
Empire State Bldg. **New York City**
Oxford 5-1170

AVAILABLE

Textile mill manager: capable executive presently employed directing two Canadian plants for over ten years weaving a large variety of synthetic fabrics desires to return to U.S.A. Will consider challenging position elsewhere. Formerly associated with quality R. I. mill fully qualified.

Box 863

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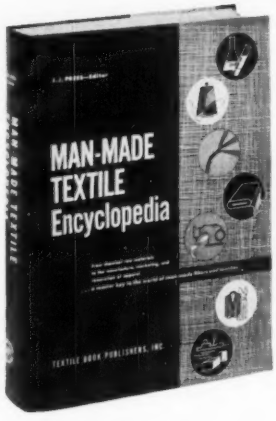
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Calendar of Coming Events

May 3—AATT monthly meeting. Della Robbia Room, Hotel Vanderbilt, New York, N. Y.

May 4-5—American Institute of Electrical Engineers, Textile Industry Committee annual conference. Heart of Atlanta Motel, Atlanta, Ga.

May 5-6—Phi Psi Fraternity, 58th annual meeting, Shoreham Hotel, Washington, D. C.

May 10-14—Carolina Yarn Association, annual outing. Carolina Hotel, Pinehurst, N. C.

May 15-20—National Cotton Week.

May 16-17—National Cotton Council, joint cotton marketing—cotton research clinic. Peabody Hotel, Memphis, Tenn.

May 24-27—Tufted Textile Manufacturers Association annual convention. Hotel Deauville, Miami Beach, Fla.

May 28-Jun. 1—Special Libraries Association, Textile and Paper Section annual meeting. Sheraton-Palace Hotel, San Francisco, Calif.

Jun. 5-8—ISA Summer Instrument-Automation conference and exhibit. Toronto, Canada.

Jun. 5-9—Society of the Plastics Industry annual national conference and exposition. Commodore Hotel and Coliseum, New York, N. Y.

Jun. 7—AATT monthly meeting. Della Robbia Room, Hotel Vanderbilt, New York, N. Y.

Jun. 17-20—Southern Garment Manufacturers Association annual convention. Roosevelt Hotel, New Orleans, La.

Jun. 19-23 & 26-30—Special Summer Programs relating to Engineering Principles of Textile materials. Massachusetts Institute of Technology, Cambridge, Mass.

Jun. 22-24—Southern Textile Association annual convention. Ocean Forest Hotel, Myrtle Beach, S. C.

Jul. 10-14—Gordon Research Conferences on Textiles. Colby Junior College, New London, N. H.

Jul. 27-Aug. 1—IUPAC International Symposium on Macromolecular Chemistry. Queen Elizabeth Hotel, Montreal, Canada.

Sep. 11-15—Instrument Society of America, Instrument-Automation conference and exhibit. Sports Arena, Los Angeles, Calif.

Sep. 21-22—Carded Yarn Association, annual convention. The Cloister, Sea Island, Ga.

Sept. 27-29—AATCC National Convention, Hotel Statler, Buffalo, N. Y.

Sep. 27-30—"Index '61" 3rd Virginia biennial state-wide industrial exposition. Roanoke, Va.

Oct. 28—Alabama Textile Operating Executives, fall meeting. Thach Auditorium, Auburn, Ala.

Nov. 13-15—Narrow Fabrics Institute, Inc. meeting. Statler-Hilton, New York, N. Y.

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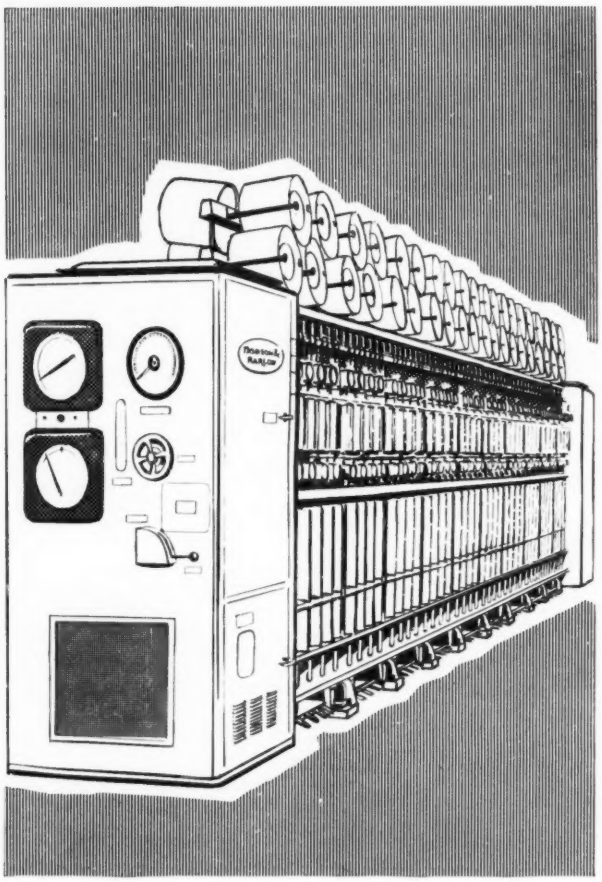
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